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VAN AMERINGEN –

AS THE EDITOR SEES IT

TEN years ago, the average coconut oil content of American toilet soaps was twenty per cent. At times during the war, it was two, three per cent, or often nil. Today, it is fourteen per cent. Obviously, the relative prices and availability of tallow and coconut oil account for the variations. The spread between tallow and coconut today is such that the natural tendency is to pump a larger proportion of tallow to the soap kettle. If that spread widens further as a result of higher taxes on coconut oil or other restrictive government regulations, the percentage of coconut undoubtedly will go lower.

At fourteen per cent, the quality of the soap is still good, all other factors being equal. In fact, such a product well may be preferred by some users. However, if this downward trend continues, induced by low cost tallow, the quality of the soap by general American consumer standards might suffer to a point where sales could be retarded. The other alternative is a rise in costs and eventually higher prices.

This coconut-tallow ratio has been kicked around for a long time, and warnings have been sounded. But with the outlook for a continued heavy production of tallow and grease in 1950, it becomes more significant. Soapers who are tempted by low tallow prices may rue their actions. Americans prefer a free-lathering soap and they have not forgotten the war-quality soaps of recent years.

YEARLY balancing of the Federal budget has been publicly stigmatized as impracticable by John W. Snyder, Secretary of the Treasury. "The general economic welfare of the country," says Mr. Snyder, "must determine whether the Federal budget should be balanced for any particular year, whether the country shall live within its income or incur a deficit." In an accompanying and equally disturbing statement, Budget Director Frank Pace, Jr., observed that "for any given year it is impractical to count on achieving any specific goal, whether a balanced budget or a predetermined surplus or deficit."

Much more economic double talk was included in both statements, but in essence the idea seems to be that the government has no intention of living within its income, even during the present period of unprecedentedly heavy tax receipts. It is discouraging to be reminded once more that the management of our country's financial affairs is in the hands of officials who are willing to admit publicly that "it is impractical to count on achieving any specific goal."

Isn't it about time we started aiming at a specific goal, — living within our income? It would seem imperative that some portion of our present tremendous tax receipts be used for debt retirement and not simply for bigger and longer gravy trains. The individual can recognize that for himself bankruptcy inevitably results from such a course. It is beyond us how voters seem unable to recognize that the same insolvency will result just as inevitably for a government.

NOTE has been made of the increased number of liquid household cleaners and dishwashing compositions which appear to be attracting more attention on the retail market. In the industrial and institutional market, liquid products have been common for years, but in the small-package field, they have always met resistance. Outside of household laundry bleach, ammonia water, and one or two others, the housewife appears consistently to have shied away from liquids in bottles. Years of handling

chip soap in a paper carton and bar soap in and around the home undoubtedly have built up a buying and using habit. And use habits always have to be broken down in order to gain entry with a product of altogether different type.

Synthetic detergents which lend themselves to marketing in bottles in concentrated solutions are undoubtedly responsible for this new trend, if such it be. Superiority in dishwashing and certain other household operations probably accounts for their growing current popularity in spite of the pessimistic predictions of some marketing specialists that these liquids would fail (1) because of relatively high unit price, and (2) because of their inability to break down use habits which oppose liquids in bottles as against powders or flakes in cartons.

If this infant trend continues, one more string may be added to the bow of the current revolution in soaps and detergents wherein we find ourselves. Twenty-five or thirty years ago, soap was soap, and it was a nice quiet industry. Now, peace and quiet have departed, and nobody knows what is going to happen next. Research and progress are wonderful, but damned disquieting at times.

WILL prices on fats and oils go even lower during the coming year? That's the $64 question among fat buyers and suppliers. Soap purchasing agents are leaning toward the belief that they will. Their thinking is not without some support since the substantial crops of oil bearing materials harvested during the past summer, while not up to the previous year's level by a small margin, are being augmented by expanded animal fat production. This is particularly true in the case of lard, as a result of a 15 per cent increase in the size of the spring pig crop. Animals are running heavier, too, which means more fats. Cattle slaughter is expected to be larger than a year ago, and with feeding grain ample, more meat will result, all of which adds up to one of the best years on record from the standpoint of output. As a result, buyers are shortening their commitments, while producers are trying to keep up a good front in spite of their obviously embarrassing position. The past couple of months have been tough on the oil and fat people. And even though prices have fallen sharply after moving upward late in the summer, indications are that they may go even lower over the coming months. Personally, we'd prefer being in the buyer's shoes under the circumstances.

JUDGMENT against a well-known shampoo manufacturer for alleged injuries and loss of hair again focuses attention on this type of legal action. The product in question was a standard coconut oil shampoo, made for many years, and of which the manufacturer had sold millions of bottles. No other complaints arose from the same batch from which came the bottle involved in the lawsuit. Tests showed the batch to be the same as all previous lots. It is the same product sold all over the world by most shampoo manufacturers.

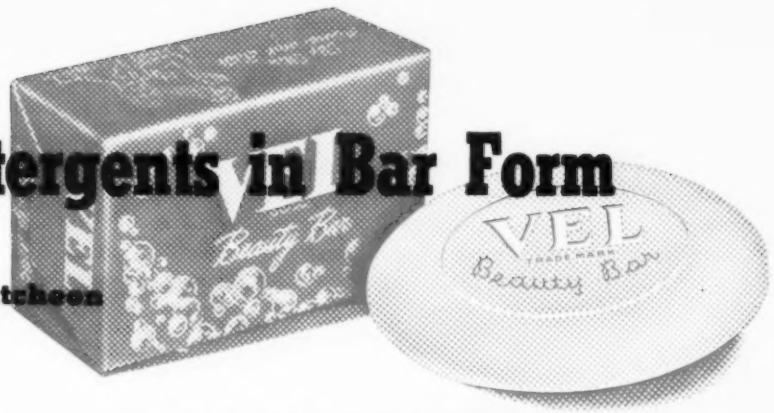
In the light of this background and many years' experience with the product, the chances that it could be the cause of baldness as well as loss of hair elsewhere on the body, — this was the contention of the plaintiff in the suit, — appear nil to a disinterested observer. All experience with this type of product over the years would point to the contrary.

Two features of the action are significant: First, the case was tried before a jury. Second, the defendant was a large company. Too often, this combination of circumstances spells trouble for a defendant, particularly in a suit for monetary damages. Irrespective of the justice or injustice of the action, no lay jury in our opinion could be qualified to weigh the true merits of the involved medical and chemical testimony offered. We do not and never have been able to see how a fair trial in cases like this can be obtained before a jury.

For many years, we have felt that legislative attention is needed to correct this general situation, the hazards of which are at all times on every manufacturer's doorstep. The suspicion of fraud is always so great that we wonder why corrective legislation never to our knowledge has been proposed.

Synthetic Detergents in Bar Form

By John W. McCutcheon



"Vel Beauty Bar," above, made by Colgate-Palmolive-Peet Co., Jersey City, is probably the best known American bar form detergent. It retails for 25 cents.

SYNTHETIC detergents in powder, bead and liquid form are now widely distributed and easily available in the most remote sections of the United States. A constant barrage of advertising, publicity and promotion has been disseminated by newspapers, radio, magazine articles, word of mouth discussion among housewives, congressional investigating committees, soap and chemical producers and retail stores of all kinds. The net result is that detergents now represent a considerable segment of the soap and cleanser market and are as well known as DDT. While they perform many of the functions of soap, in fact do some cleaning jobs better than soap, are produced in forms similar to soap, are put up in packages resembling those of soap and are priced in about the same range, there is no successful counterpart among the synthetic detergents to the bar forms of soap. A few bar form synthetic detergent products have been made and sold both in the U.S. and in Great Britain. Compared with other forms of synthetics, bar type products have received only limited attention. Why this is so is indicated in this article.

With the advancing interest aroused in synthetic detergents in the past decade, it is only natural that attempts would be made to incorporate them into bar form with or without the use of soap. Perhaps no other single request has been received by the writer more frequently over the past several years than to prepare just such formulae. Such requests are usually met with considerable misgiving, since in most cases there is little true understanding of the factors involved. In the first place, the idea is not at all new. Large research laboratories in the soap industry have been working on this problem for the past fifteen years. The fact that at present there is not a wide sale of such products should indicate something of the manufacturing difficulties involved. An attempt will be made here to summarize a few of the main points for the purpose of evaluating the potentials in this market.

In the first place, we should distinguish between the two types of bar form synthetic detergents which may be produced: toilet cake and laundry. These two categories may further be broken down into "all synthetic detergent" and "soap plus some synthetic detergent" classes. Since each type of product and field of use varies, they will be treated separately.

Toilet Cake Bar

ALL synthetic versus all soap bar: All synthetic detergent bars have made their appearance in limited areas on the American market. "Vel Beauty Bar" made by Colgate-Palmolive-Peet Co., Jersey City, N. J., is an example which has received considerable attention. To understand the principles involved we will enumerate a few qualities of a good toilet soap. It must lather well in hot and cold water, have a smooth silky feel when rubbed between the hands, usually be white or if colored, have a bright color indicating purity of base. Longitudinal cracks must not open up in the soap when left standing in the wash basin, it must not waste away too rapidly with use or on standing wet. Besides, a good toilet soap must be reasonably permanent against discoloration and rancidity in storage and be cheap and readily available. What could a synthetic bar offer that is not included in the above category, or how well could an all synthetic meet these characteristics?

Many of the detergent materials are defatting to the skin and leave it dry and harsh. Selection must be made of products which have the minimum effect in this direction, or they must have subsidiary salts or conditioners present to offset this drying characteristic. Also, many detergent materials are hygroscopic so that the builder or binder must usually be present in sufficient amount to offset this property. Soap is plastic when warm and molds easily under low pressure conditions in automatic or foot presses. Many synthetics in pure form are pasty or liquid materials which require neutral salts to put them in a form readily molded. The presence of such salts usually requires fine grinding and pressures for molding, much higher than normally required for soaps. U.S. Pat. 2,374,544, for example, speaks of 10,000 pounds per square inch. Lubrication of the dyes in such cases is an important factor in production. Cost also enters largely into the production of bar form synthetics. Toilet soap when freshly made usually runs about

86-88 percent anhydrous soap. At the present time the basic price of an alkyl aryl sulfonate on a 100 percent active basis is about four times the price of soap, which limits the percent active in the synthetic to about 20 percent. If a higher priced base detergent such as an alcohol sulfate is used the percent active must be dropped to about 10. The net result is that a heavy burden of responsibility is put on the inorganic salt present to provide a base which in itself will not disintegrate too rapidly in water nor permit the detergent to do so either. In addition it must feel smooth, be neutral and non-irritating to the skin and available cheaply. Urea (U.S. Pat. 2,374,187) and its derivatives are examples of such products. Boric acid has been used (U.S. Pat. 2,373,863). Generally, it is desirable to add to such salts a binding material and a substance such as the sodium salt of carboxy methyl cellulose or methyl cellulose to improve lather stability. The difficulties, although great, are not insurmountable as will be seen in the examples to follow.

What are the advantages such a synthetic product would have over soap, or what are the disadvantages of using soap itself. In the first place, with a synthetic detergent, the product may be made acid or used under acid conditions without fear of hydrolysis to fatty acid and alkali as is characteristic of soap. This advantage, while important in many industrial processing operations such as the acid scouring of wool, hardly has a place in toilet cake consideration. It is probably true, however, that soap solutions hydrolyze to some extent in solution to produce a slight hydroxyl concentration. The lower fatty acids such as lauric, hydrolyze to a greater extent than the less soluble and higher fatty acids such as stearic. The effect of this hydrolysis in causing skin dermatitis, however, is grossly exaggerated as testified by the satisfactory use of soap on the finest textured skins. Occasionally, however, there is a person who is allergic to soap, particularly soap containing coconut oils or palm kernel oil. For such individuals synthetics do offer relief. In many cases however, such relief may also be obtained by using superfatted soaps such as boracic and cold cream soaps, etc. The point to be made here is that since the number of persons genuinely allergic to soap is very very small the potential market and such preparations would be premium items offered through medical channels.

A second advantage of synthetics over soaps, and one that frequently overshadows all other considerations, is its resistance against precipitation in hard water. Important in laundry and dishwashing work, this property of synthetic detergents is not significant when it comes to toilet bar use. The reason is evident if the method of use is examined closely. In washing, the wet bar is rubbed back and forth between the hands until a concentrated lather is worked up. Unlike the detergent solution in a washing-machine, the concentration may reach several percent, which is far more than enough to take care of the hardness present in the water. Normal hard water runs about 150 to 250 ppm as $CaCO_3$. Sea water is over twenty times as hard as this, and yet coconut oil soap will lather satisfactorily in sea water! Even in the shower or bath, one does not attempt to dissolve enough soap to make a detergent solution. The body is lathered part by part and rinsed. The heavy lather loosens and emulsifies the dirt and the rinse carries it away. It is true that in the residual rinse the hard water precipitates the last trace of soap just as it does in the washing of dishes with soap. A synthetic detergent rinses clean. A glass being smooth rinses to a brilliant sparkle with only a dash or two of water. Rinsing the human skin, which is full of crevices and cracks, is a rather tedious job and one that exasperates the average person. After the synthetic detergent has been rinsed from the hands they still feel slippery and slimy on being rubbed together. With soap, the first dash of water creates a feeling of being well rinsed and free from soap. The after effect of synthetics, of more psychological than practical importance, is none the less very real, and acts as a barrier against general acceptance of synthetic detergents. What is normally considered an advantage of synthetics, therefore, actually turns out to be a disadvantage. It appears, therefore, that synthetics as in toilet cake forms have no broad application, but serve best as specialty products confined to medical cases.

A few typical formulae from several recent patents given below include: U. S. Pat. 2,373,863 April 17, 1945, E. A. Vitalis, to Amer. Cyanamid Co.

Formula 1

	Percent
Sodium di amyl sulfosuccinate	10
Methyl cellulose (10% soln.)	10
Boric acid	80
	100

Note: Add a small amount of water and mold into cakes. Or omit the water and form into cakes by means of pressure.

A variation of the same patent is:

Formula 2

	Percent
Disodium N-Octadecyl sulfosuccinamate (36% Soln.)	15
Sodium diamyl sulfosuccinate	5
Sodium sulfate	5
Methyl cellulose (4% soln.)	10
Boric acid	65
	100

Note: The methyl cellulose improves the permanency of the lather.

The four formulas below are based on U. S. Patent 2,374,187. L. H. Flett to Allied Chem. & Dye Corp.

Formula 3

	Percent
Commercial sodium lauryl sulfoacetate	5
Urea	95
	100

Mold under pressure of 10,000 pounds per square inch.

Formula 4

	Percent
Commercial sodium lauryl sulfoacetate	5
Urea	85
Phthalimide	10
	100

Note: The phthalimide, according to the patent improves cake resistance to water disintegration.

Formula 5

	Percent
Commercial sodium lauryl sulfoacetate	50
N — N — di n-butyl urea	50
	100

Note: The use of a more insoluble urea derivative permits a greater concentration of detergent, without unduly overbalancing the water disintegration factor.

Formula 6

	Percent
N-mono-n-butyl urea	47½
N-N-di-n-butyl urea	47½

Why bar form synthetic detergents have fallen behind other forms has puzzled many people. Price is one big factor. Other reasons and formulas are given.

Commercial sodium lauryl sulfoacetate	5
	100

The organic salts are melted together at 95°C, the detergent stirred in and the whole cast into bars.

Note: Other derivatives of urea given include guanidine carbonate, dicyandiamide, caffeine, ethyl carbamate, etc. Other detergents include the alcohol sulfates, sulfated esters, sulfonated amides, sulfated alkyl ethers, etc. See original patent for further details.

A bar form detergent covered in U. S. Pat. 2,374,544. L. F. Hoyt to Allied Chem. & Dye Corp., is described as follows:

Formula 7

	Percent
Commercial sodium lauryl sulfoacetate	25 (a)
Thiourea	75
	100

(a) Contains 30 percent inorganic salt chiefly NaCl.

Grind to allow 95 percent to pass a 200 mesh screen.

Moisten with one percent of its weight with water and press into tablets under 10,000 pounds per square inch pressure.

Another type bar form synthetic, mentioned by L. Schwartz in an article, "Protective Oint. and Industrial Cleansers"; *Medical Clinics of North America*, July, 1942, pp. 1195-1212, is made as follows:

Formula 8

	Percent
Detergent ("Igepon," "Santomerse," "Nacconol," "Duponol")	20
Lanolin	3
Colloidal Clay	76
Perfume	1
	100

Laundry Bars

FOR laundry purposes, bar form synthetic detergents have been developed. Composed chiefly of approximately 20 percent synthetic detergent, they contain also a filler such as kaolin, a binder and water. Methyl cellulose, etc., may be used also as the binder. A typical synthetic detergent laundry bar might be formulated as follows:

	Percent
Synthetic detergent (alcohol extract)	19.1
Moisture	21.2
Inorganic salts	27.9
Organic matter (binder)	31.8
	100.0

Such a product would be of interest chiefly in regions using extremely hard water or in countries whose washing habits still favor a bar over a powder product. Products of this type would not be widely used in the United States for two reasons: 1) At present there is a gradual shrinking of the demand for laundry soaps in bar form in favor of flakes and granules, 2) the highly competitive price structure of the soap industry. In countries where primitive methods of washing in extremely hard water at rivers' edge are still employed, there is a potential market if the product could be made cheaply enough.

A third classification, covering part soap and part synthetic products, is the most important from a market point of view. Intensified development by the Army and Navy during the war (Bureau of Ships Spec. 5FD7 (INT) April 1942, Ibid 51S46, (INT); Aug. 1944; Army Service Forces, Office of Quartermaster General Spec. #100 A, March, 1944) produced results which were far and beyond those originally intended. What started out as a stop gap investigation has resulted in establishing a product superior to anything called for previously.

The need for such a product was first felt when coconut oil was in very short supply. By using ratios of salt free synthetic detergent to soda soap of 2:3 up to 2:1 a bar was obtained which was approximately three times as efficient as the regular coconut oil soap of the old specification Fed. Spec. P.S. 611 October, 1930. The Army specification (ibid) of 1:1 soda soap to salt free synthetic is probably average for this type of bar. When the ratio of synthetic detergent to soap falls to ratios of 1:10 cleaning efficiency is greatly lowered unless other additives are added such as sodium carboxy methyl cellulose, ethyl cellulose, ether, etc. These function, according to L. McDonald, *Soap & Sanitary Chemicals* #12, 41-43 & 61 (1945) to equalize the rate of solution of soap and non soap detergent, promote the formation of micelles and increase lather power.

In the reference cited it is shown that sodium stearate is greatly improved in 300 p.p.m. hard water in both lathering and detergent power by the addition of five percent anionic type detergent, four percent non-ionic type and 0.5 percent resinous plasticizer of which ethyl cellulose ether is given as an example. However, no data were presented to show that such additions to regular, 80 percent tallow 20 percent CNO, toilet base were of value. It is the author's opinion that ratios of anionic synthetic to soap of less than 0.4 percent would be of questionable value as far as actual detergency is concerned. The incorporation of small amounts of non-ionics to either soap or anionic detergent may increase the solubility of the latter. In respect to lasting qualities of the bar, feel, lathering characteristics, etc. this may be an entirely different matter. In bar form, the concentration of soap is very high, and soap-synthetic mixtures yield high detergent values. Even at a two percent concentration such mixtures are superior to soap or detergent alone (Studies on Synthetic Detergents, Jay C. Harris, *A.S.T.M. Bulletin* #125. Dec. 1943), but when the concentration falls to 0.5 per cent or less, detergency falls off sharply and the results are inferior to either product used alone (Builders with Synthetic Detergents,

(*Turn to Page* 145)

SHAMPOO

RISKS of damage suits faced by manufacturers of shampoos, lotions, shave creams, or for that matter any product applied to the exterior of the body to cleanse it or for any other purpose, are emphasized once again in a recent personal injury suit against the J. R. Watkins Co., Winona, Minn. The action was entered by a woman who stated that she used Watkins Coconut Oil Shampoo and claimed that baldness resulted. The case was tried before a jury with the customary battery of expert witnesses and the jury awarded the plaintiff $27,000 damages for the alleged damage.

Examination of a summary of the testimony in this case indicates that this same danger is continuously faced by all manufacturers in the field. Irrespective of the merits of this individual case, the facts are self-evident that no manufacturer, particularly if that manufacturer is a large corporation, stands a chance for a fair trial where the case is tried before a jury. Lawyers are frank to admit that any corporation going into court as a defendant in a jury case has two strikes against it before the evidence is even presented. The thinking that manufacturers are all rich and, right or wrong, can well afford to pay a damage claim is common among juries.

In any lawsuit involving highly technical medical or chemical testimony, the ability of lawyers to confuse the members of a jury who have no knowledge of such subject is apparent. There are lawyers who maintain that no such cases should be tried before juries, but rather before one or more judges. They contend that juries on the whole are unable to cope with the technical testimony presented and thus unable to come to an intelligent or just verdict. But all this does not alter the fact that such cases *are* tried by juries and that plaintiffs where they sue corporations have met with an unusual degree of success in their actions. Each newspaper report of such success in an action for product damage tends to encourage further suits. If these verdicts are reversed upon appeal, as frequently happens, the news is then of secondary importance and is usually treated thus by the papers. The cost of defending the suit and of appeal which the manufacturer must stand is conveniently forgotten. No matter how flimsy the case, the manufacturer *must* defend it, while there are always lawyers on the other side who will take such cases on a contingent basis.

Encourage Flimsy Suits

TO protect themselves, most manufacturers carry product liability insurance. This passes the responsibility on to an insurance company, but in no way alters the basic merits of such damage actions. On the whole, adjusters for insurance companies are interested in getting their firms "off the hook" as cheaply as possible. Hence, they are inclined to settle out of court as the cheapest and most practical solution of *their* problem. But, in so doing, they only add fuel to the fire. They encourage others to file false or flimsy claims or lawsuits, automatically jacking up rates for all insured manufacturers. The willingness of insurance companies to temporize with almost obvious fraud for "practical" reasons has probably been one of the greatest contributing factors to the steady increase in product damage cases over the past twenty-five years.

Examination of testimony of many such lawsuits over this same period of time indicates that a considerable proportion of plaintiffs must have been either badly mistaken as to the cause of their injuries, if there have been injuries, or that they have attempted out-and-out frauds. Some of the medical and chemical evidence presented in these cases has been so fan-

DAMAGE SUIT...

Recent jury case against J. R. Watkins Co. emphasizes risks faced by manufacturers arising from claims of alleged personal injuries. Watkins' counsel comments on testimony.

tastic as to raise the question why any attorney or so-called expert would dare offer it in court. Yet, it may have impressed a jury and been taken at face value by uninformed jurors. The number of cases where damage was blamed on the use of a certain product merely because one allegedly followed the other, and all other possible causes of the damage or contributing factors ignored, has been quite amazing. That a plaintiff must prove his case with believable evidence appears to be a forgotten doctrine. All of which adds up to potential legal headaches for every manufacturer and marketer of shampoos and other products designed for use on the human body.

Business groups, trade associations and fraud agencies, conscious of this threat to every manufacturer, have bandied this serious problem about for years. Where there has been evidence of obvious fraud, they have acted upon occasion against both plaintiff and attorney. But where the cases have been of a borderline character, or where the plaintiff sincerely believes in the justice of his or her action no matter how flimsy, and where they get to a jury, the results frequently have been serious for defendant manufacturers. Probably, this desire to keep these cases away from jury trials may account in part for the desire of insurance companies to settle up quickly out of court.

The solution of the problem appears to rest in part in possible legislation with teeth which would discourage flimsy or obviously fake suits, entailing perhaps penalties to plaintiffs and attorneys alike. And the second part might be legislation placing this type of action solely in non-jury courts or before technical referees or boards of experts by court reference. The multiplicity of such lawsuits definitely would seem to call for wider study by legislators with a view to some sort of corrective legislation.

The recent case against the J. R. Watkins Co. has been outlined and commented upon by company counsel stating their views on the testimony and their conclusions to which they believe this leads. This statement on the case follows:

Claimed Shampoo Damage

IT was claimed by Thora Raymond, plaintiff, that the J. R. Watkins Company put on the market a bottle of Watkins Coconut Oil Shampoo that contained a poisonous or dangerous ingredient, whereas it was warranted as good for hair and scalp. The plaintiff bought or acquired a bottle of this shampoo and a package of Washing Compound in September 1947, the only Watkins products she had ever bought or acquired, used the shampoo once and claimed she lost her hair on the scalp as a result, followed by the loss of all hair over the entire body.

We first came in contact with plaintiff when she commenced this action. This is strange, because on examination for deposition, plaintiff stated, after use, no inflammation of the scalp appeared until the following morning, and there was no evidence of pimples or blisters folowing the inflammation, nor ever any evidence of marks or scars. While on examination at the time of trial, she testified she noticed redness of the scalp within an hour to an hour and a half, followed by white pimples over the entire scalp almost immediately, but still no evidence of marks or scars. Aside from the inconsistency of this testimony, if following use of a soap, conditions testified to by plaintiff had occurred, it is unnatural if some report were not made to the manufacturer of the product. Natural inquisitiveness would prompt calling it to the manufacturer's attention.

Dr. S. E. Howard, plaintiff's medical witness, was asked his opinion of the cause of her condition, based on immediate inflammation of the scalp after use of the shampoo, followed by presence of pimples. Plaintiff's shift in her attack could then be understood. Obviously, this doctor, who did not see her until June 1949, had to have a foundation if his opinion were to be given, so the symptoms testified to had to be moved up a day. It was important to get these things in even to express an opinion, but any opinion is no better than the facts on which the opinion is based.

His opinion was that the loss of hair on the scalp was caused by application of a strong chemical, and the loss of hair over the rest of the body by emotional upset due to scalp condition.

Was Shampoo Used?

IF the facts are not believable, neither is the opinion. Can the defense accept the statement that plaintiff used the shampoo? We not only questioned her statement that she used the product at all—we deny it could have caused harm if she had used it.

Plaintiff not only did not notify the manufacturer of her condition, but evidently treated it very lightly. The shampoo treatment was given to her by a friend on December 16, 1947, and she went to her family doctor in Minneapolis on December 29, 1947. He prescribed an alcohol solution, and in April of 1948 received a letter from Mrs. Raymond, in reply to which he advised her to see a specialist, but saw her only once, on December 29, 1947. Plaintiff did not take his advice, which she admitted, and the only other doctor appearing as a witness for her was Dr. Howard, who examined her on June 1949. Her family doctor was entitled to his opinion about her condition, but was not asked. She got into the hands of Dr. Howard only three months before the trial, and was taken there by her attorneys.

What else causes an air of suspicion? If this shampoo were dangerous to plaintiff, why wasn't it as dangerous to her friend who gave her the shampoo? This woman had used, and is still using, Watkins shampoo. Plaintiff claimed the shampoo is dangerous. Yet, although defendant offered to have the shampoo produced in court by plaintiff and applied to an independent witness in court, this was refused. Plaintiff's attorney refused to allow it to be applied to plaintiff, in court. Defendant was willing to run the risk of these tests, because if something was wrong with the shampoo, if it contained poisonous or dangerous ingredients, these tests would prove it. Defendant's exposure in these tests was as great as plaintiff's.

Insofar as the evidence is concerned, plaintiff's condition, as claimed to be caused by the shampoo, had to be deter-

mined by experts. Plaintiff's attorney realized they must have an expert, so produced Dr. Howard. His opinion was based entirely on what plaintiff or her attorneys told him. His opinion was that her condition was due to application of a strong chemical. Testimony in plaintiff is lacking as to evidence of a strong chemical. All testimony is that the chemical known as potassium hydroxide, used with coconut oil to form soap, is in weak solution. This is the testimony of Francis E. Jilk, Chemist for defendant, and also of Dr. L. H. Reyerson, Dean of the School of Chemistry, University of Minnesota, who also produced test tubes in which human hair had been sealed with undiluted shampoo at pH 9.9, pH 10.2 and pH 12, without any action on the hair.

Shampoo pH Safe

ALSO this was the testimony of plaintiff's own technical witness, Dr. H. H. Barber, also of the School of Chemistry, University of Minnesota. Dr. Barber testified alkali in soaps in common use ranged between pH 8 and pH 12. Plaintiff tried to get across a false impression that a shampoo at pH 10 would be dangerous, and that their bottle analyzed by Dr. Barber, showing a pH of 10.2, was a dangerous product, but Dr. Barber, plaintiff's own witness, stated a pH 12 would not be harmful. There is no testimony that the pH of any one of seven bottles of Watkins Coconut Oil Shampoo in evidence (plaintiff's bottle bearing Code #769, four company control bottles bearing Code #769, bottled in September 1946, one bottle Code #7919 produced by Dr. Reyerson, and one bottle produced by Dr. Barber) would be dangerous, or even harmful. Plaintiff's case rested on Dr. Howard's testimony that plaintiff's condition was caused by a strong chemical, and that this chemical caused the condition without destruction to skin and without leaving any evidence of scar tissue.

Plaintiff attempted by Dr. Barber to show the pH of the Shampoo at time of use was much higher than at the time of trial; that, when the cap is taken off the bottle and it is exposed to air, the harmful properties disappear. Dr. Barber's report on plaintiff's bottle tested precluded any possibility of this occurring as this reaction would result in the presence of potassium carbonate and he admitted his report showed no evidence of carbonate. All technical testimony, Dr. Barber's included, shows any possible drop in pH due to exposure to air would be very slight. There is absolutely no evidence that any solution with a pH up to 14 will destroy hair.

Plaintiff subpoenaed Mrs. Susetta Pietrus, St. Paul, Minnesota, who had recovered a $20,000.00 verdict against The J. R. Watkins Company for loss of hair, diagnosed as alopecia areata. She objected to removing the turban she wore, and to a question as to loss of hair following use of Watkins Coconut Oil Shampoo—she answered that she was trying to forget the whole thing and would not answer further questions put by plaintiff's attorney, but did answer a question as to hair evident on the crown of her head, that it accidentally grew back along the front of her head.

Dermatologist Testifies

DEFENDANT put in the testimony of Dr. Paul O'Leary, in charge of the Section on Dermatology, Mayo Clinic, Rochester, Minnesota, of Dr. Francis E. Sinear, of the Department of Dermatology, School of Medicine, University of Illinois, and Dr. H. E. Michelson, Director, Division of Dermatology, School of Medicine, University of Minnesota, all practicing dermatologists.

Dr. O'Leary had examined plaintiff, found no evidence of hair or spicules anywhere on plaintiff's scalp or body; that she stated her scalp became red and itchy the day after using the shampoo, but this condition disappeared after three or four days followed by falling of the hair from the scalp. Based on his examination and on his own knowledge of the composition of Watkins Coconut Oil Shampoo, it was his opinion *there was no causal connection* between plaintiff's use of the shampoo and condition of alopecia totalis evidenced by plaintiff; that no strong chemical could be applied to the scalp or body without destroying skin tissue and leaving scars; that alopecia is a disease and is not related to chronic diseases; that he uses irritating applications to the scalp in the treatment even of dandruff; that emotional upset is not a reason for alopecia; that he is in frequent contact with cases of baldness; in 1948, 18,000 patients passed through the dermatology department of the Mayo Clinic; that in all his experience, his study and research, it was not possible to apply any chemical which would even produce a disturbance of the hair follicle and not cause destruction of skin; that plaintiff's condition followed a normal course of events in a person who is developing alopecia.

Dr. Francis E. Sinear testified, in his practice, he has seen thousands of cases of alopecia of all types; that based on the given evidence, it was his opinion *there is no causal relationship* between the application of Watkins Coconut Oil Shampoo—containing specified ingredients—and alopecia totalis; that it was not possible to cause destruction of the hair follicle by the application of this shampoo; that bichloride of mercury, formic acid and resorcin are used in the treatment of alopecia, to inflame or irritate the scalp; that the papilla of the hair follicle is placed so deep, no chemical can reach the point at which hair growth occurs; that shock to nervous system will not cause a condition of alopecia; that there are various causes for loss of hair, including ringworm of the scalp, fungus infection, but application of any shampoo could not cause it.

Dr. H. E. Michelson testified that a local inflammation of the scalp has nothing to do with body economy proper.

No Damage to Hair

ASSUMING the testimony to be true, plaintiff has alopecia totalis, which is not associated with any local irritation. *There is no causal relation* between external application of a chemical and alopecia totalis. It is impossible to apply a strong chemical to the scalp without injury to the skin.

Examining test tubes prepared by Dr. L. H. Reyerson, the hair in undiluted shampoo is perfectly normal. Action of the shampoo or any chemical on the hair would be the same if the hair were on a human or cut off, as in the test tube.

Iodine to a strength of 10 per cent is frequently used in treatment of alopecia, as is carbolic acid in various solutions up to clear. Purpose is intentionally to irritate the scalp.

To affect hair growth, any application to the scalp must first come in contact with the hair follicle. When a strong chemical is applied, action is to seal off the hair follicle, therefore hair growth cannot be retarded or destroyed. Nothing applied externally to the scalp will cause destruction of hair follicle. It is impossible for emotional disturbance to have caused loss of hair over entire body.

Thus, there is no creditable evidence putting the responsibility for plaintiff's condition on the defendant. Defendant's contention that it did not contribute to the loss of hair sustained by the plaintiff and that she was not injured through any negligence of the defendant, raises a question of fact, to be determined by the jury.

Judge Donovan, in his charge to the jury, emphasized that plaintiff could not recover unless they found the loss of hair was proximately caused by Watkins Coconut Oil Shampoo; that there must be a causal connection; that the burden was on the plaintiff to show that she used the shampoo according to direction on the bottle, that it contained poisonous or deleterious ingredients or substances in dangerous quantities, that she used the shampoo and that it caused the damage she claimed."

A. C. Trask Co. Is 25

Arthur C. Trask Co., Chicago, this year is celebrating its silver anniversary. The firm, which produces processed and sulfonated oils, waxes, and chemicals, was founded by Arthur C. Trask in 1924. Before going into business for himself, Mr. Trask for 20 years was with Marden, Orth & Hasting, Chicago. Since 1929, the company's headquarters and main plant have been at 4103 So. LaSalle St. In 1943, the company purchased property at 3959 Wentworth Ave., adjacent to the tracks of the Rock Island and Pacific Railroad. The plant there has been converted into a modern vegetable and marine oil storage warehouse. The company also maintains a Boston office. Associated in the business with Mr. Trask are his sons, Hugh and Eugene. Walter Wacholtz, a member of the staff since 1945, is technical director.

After remodeling (right) chain store's relocated household products department's volume rose sharply. Sales of cleansers, waxes, etc., gained 37.4%, as compared with 30.8% for other items.

Cleansers Build Chain Store's Volume

WAXES, polishes, cleansers, ammonia and other household chemical products proved their value as volume and profit getters when given better display location and more space according to a recent market survey conducted in a remodeled chain super-market in a metropolitan mid-western city. Officials of the store in planning its renovation, decided to rearrange the departments and bring out into the open the household products department which had been located in shelving across the rear of the store. After the store had been remodeled, the household products department, was shifted from the out-of-the-way location traditionally assigned to such departments to an important traffic lane near the check-out counter. Volume in dollars for product sales surveyed in the relocated household cleaning products department rose an average of 37.4 per cent in a test period following remodeling, as compared with a similar period before changes were made. Gains in grocery sales, excluding items in the household products department, amounted to 30.8 per cent.

The percentages of sales gains were broken down as follows: Household and cleaning supplies, which includes cleansers, sprays, steel wool, brooms, mops, etc., 78.3; soaps and soap powders, 25.3; waxes and polishes, 26.1; laundry supplies, 30.1 and paper products, 47.3. The method used to measure sales volume consisted of recording the sales movement of all household products in a two-week period before the store was remodeled and in a like period after it had been renovated.

Since the two week period chosen for the survey before remodeling came at a time when housewives were buying more heavily of products for cleaning in anticipation of a holiday season, the totals were somewhat higher than they might have been at another time. The percentages of sales increase are therefore correspondingly lower. Sales of waxes and polishes, for example, were up seasonally during the two week period of the test before the store underwent changes. Another factor reducing the gain shown by soaps and soap powders was a six per cent cut in prices of those items during the two week period before remodeling took place. In addition, during the pre-remodeling test period there were several "deals," which have a tendency to inflate sales

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ALTHOUGH household chemical specialty products such as cleansers, waxes, polishes, ammonia, bleaches, and similar items sold in grocery stores are known to have high profit margins, ranging from 25 to 30 percent, many stores relegate the household products section to the rear of the store or to some other out-of-the-way location. The article that follows shows how one chain super-market store in a metropolitan mid-western city considerably increased sales volume after remodeling by giving household products more and better display space. The survey was conducted by B. L. Schapker, Carew Tower, Cincinnati, and a report on it was furnished exclusively to SOAP & SANITARY CHEMICALS by Owens-Illinois Glass Co., Toledo, O.

TALL OIL

By C. B. F. Young,

George H. Eick

and William Warmack*

National Southern Products Corp.

A review of its uses in the soap, insecticide and disinfectant manufacturing industries

TALL OIL is a by-product of the Kraft industry. In reality it is the sap of the pine tree. Appreciable amounts of this material can be recovered from the Southern Kraft mills which use long leaf, short leaf, slash, and loblolly pine as their raw material. Fair amounts are recovered in the paper mills located in the Wisconsin-Minnesota-Michigan area. Certain of the Canadian plants in the eastern part of the country also produce limited amounts of tall oil. Since tall oil is a by-product of the Kraft industry, the production of this interesting mixture of fatty and rosin acids depends upon the production of pulp.

The steps involved in the production of pulp are as follows: The logs in the woods are cut in sections of about five feet in length and from three to eight inches in diameter. They are brought to the mill and here debarked by being placed inside a large rotating drum. The debarked log is then fed into a chipper which is a round unit having at least four blades which cut the log into chips approximately two inches square and one-fourth inch thick. These are fed into digesters which contain organic and sodium sulfides, and the temperature is raised to 150° C. at 150 pounds pressure from three to four hours. At the end of this time the lignin or cementing material of the wood and sap is dissolved and put in a solution. The cellulose remains behind. The solution is drained off and washed free from the cellulose which is then formed into sheets of pulp.

In order to make the process economical the free alkali must be recovered from the solution. Pentuple effect evaporators are used to remove the water from the solids. As the percent of solids increases, because of the removal of water from the whole, a salting-out effect occurs. It will be recalled that the lignin, sodium salts and the sap of the pine tree are all present in the solution. The sodium salts of the sap are sodium resinate, sodium oleates, sodium linoleates, etc. These materials, as can be readily seen, are ordinary soaps. As pointed out above, as the salt content of the solution increases, it being more soluble than the soap causes the latter to separate and float to the top of the solution. This is very detrimental to the paper mills as the floating soap gets on the tubes of the evaporator and prevents heat transfer which in turn prevents evaporation of the water. Thus the production of the plant is cut down. Most mills are now taking the liquid between the second and third evaporators and allowing this to remain in a holding tank for approximately thirty minutes at which time the soap, sometimes called black liquor sulfate soap skimmings or floating soap, rises to the top of the solution, is skimmed off and sent to holding tanks.

To follow through with the evaporation, the liquid is returned to the third effect evaporator and continued through the last one. Then this is fed into a furnace where the lignin and all combustible materials are burned off and the remaining water removed. Sodium sulfate or salt cake is added to make up for the loss and the resulting product is then put back in the solution and used to dissolve more wood chips.

The black liquor sulfate soap skimmings recovered between the second and third evaporator are allowed to settle in a holding tank for twenty-four to forty-eight hours and then any black liquor which settles is sent back to the paper manufacturing unit. The floating soap is put into tank cars and sent to us. We buy the skimmings from ten to twelve plants located from Texas to Virginia, blend the various soap stocks, and treat them with mineral acids to liberate the free fatty and rosin acids. By blending the soap stocks, a uniform product is produced for the customer during the four seasons of the year.

For many years the pine tree was considered to contain no fatty acids. None was found upon "tapping" the trees to obtain turpentine. However, the tree is not deeply cut for

* Presented before the 35th mid-year meeting of the National Association of Insecticide & Disinfectant Manufacturers, at the Hotel Drake, Chicago, June 13, 1949.

"tapping" and the fatty acids are found inside the tree. For this reason, the fatty acid portion was not discovered until the composition of the "black liquors" was determined.

Generally, tall oil consists of 50-52 per cent fatty acids, 41-43 per cent rosin acids, and seven per cent sterols or higher alcohols. A typical analysis of the fatty acid portion indicates: 48 per cent linoleic acid, 45 per cent oleic acid, and seven per cent saturated acids.(1) Oleic acid is an unsaturated acid found in animal and vegetable oils. Linoleic acid occurs also in vegetable oils. The rosin acids resemble abietic acid, which is found in various percentages in ordinary rosin. The unsaponifiables contain abundant quantities of sterols of which phytosterol is one of the primary constituents.

Small amounts of highly-colored and highly-odorous materials are also present in the oil. These materials have produced serious problems and sometimes barred the use of tall oil in many applications. In the last few years the number of uses for tall oil has greatly increased, and much research has been carried out to improve the color and odor of the oil. As a result of this work, refined tall oils are now available with greatly improved color and odor characteristics.

The Swedes were very active in first developing tall oil. Most of the refining processes were developed in Europe. Tall oil has been produced in the Scandinavian countries since about 1900, but was not produced in the United States until about 1930 (2). At that time it ranked as a fatty acid. At first it was offered as a substitute for commercial red oil, but as its properties became better known, new uses were found for it.

Tall is Swedish for pine. In Sweden, where the material was first developed, tall oil was known as *Tallolja* which means oil of the pine. The Germans called it *Tallol;* but, inasmuch as we already had a product in America known as pine oil, it was given the name "tall oil" upon the suggestion of the War Production Board.

Tall oil had a very limited market in this country prior to World War II. There was a reluctance on the part of potential users to attempt to adapt crude and refined tall oils to their formulas. Many of the difficulties encountered in trying to use the oil would not have occurred had the processor realized that he was attempting to substitute a material, which varies over wide limits, for materials with which he was familiar.

Tall Oil in Soap

TALL OIL has proved to be a useful raw material to the soap maker. The high percentage of unsaturated groups in tall oil and its low titre have a tendency to increase the affinity toward mineral oil as well as aliphatic and aromatic compounds. It is a well known fact that rosin acids in soap increase its affinity toward mineral oil, besides the sterols or unsaponifiables. By making use of these rosin acids in soap, low water solubility results as indicated by a lack of suds unless water softeners are added, such as: "Nullapon B," "Sequestrene A," tetrasodium pyrophosphate, silicates, or equivalents. The addition of these agents will lessen the forces existing among the various surface particles of water, or technically, lower the interfacial or surface tension. Dilute tall oil soap solutions have abnormally low surface tension; because of this fact, tall oil soaps have the remarkable ability to form a colloidal suspension. This suspension adsorbs and entangles the dirt particles and enables them to be rinsed away. Grease, oil and dyestuffs are emulsified and washed away as small droplets surrounded by portions of the soap solutions, which serve as a protective colloid. For this reason, tall oil soaps are widely used for the degreasing of aeroplanes, automotive engines, in the cleaning of asphalt tile and linoleum, as well as in the preparation of metal stock prior to plating. Incidentally, in industrial cleaning, sudsing is not essential.

It can be shown that in a film on the horizontal surface of pure water, the sodium parts of the molecules, including the carboxyl group to which the sodium is attached, lie in the water while the other ends of the molecules (hydrocarbon part) are out of the water. A fat or grease which is insoluble in pure water is soluble in the hydrocarbon part of the soap molecule. The soap molecule then acts as a connecting link, as one part of the soap dissolves the fat and the other part dissolves in the water. The globules of soap molecules in water have the sodium ends of the molecules pointing outward and in contact with the water, while the hydrocarbon parts of the molecules are directed inward and in contact with each other. (For other information on surface activity refer to Item 10 of the Reference.)

The cleaning properties of tall oil soaps are excellent and they are used for: cleaning overalls and wiping rags in industrial laundries; wool scouring in the textile industry; in brown bar laundry soaps; in spray dried powdered or bead soaps; in scrub, paste, and liquid hand soaps, as well as in the cleaning of metal stock, such as: zinc, aluminum, tin, brass, copper and steel prior to a plating operation. Other uses of tall oil soaps include; emulsifiable disinfectants, coal tar disinfectants, amine emulsions, sulfonated oils, insecticides, plant sprays, and cattle dips.

Tall oil soaps have good sudsing properties in soft water, but this property decreases as the hardness of the water increases. The drop in sudsing ability of tall oil soaps is faster than that of stearate soaps, but this drop can be overcome by blending other fats with the oil to make soap. Upon saponification, for example, of a mixture of 35-40 per cent of high titre fats with 65-60 per cent of tall oil, the soap produced will have sudsing properties comparable to high titre fats. Because of its comparatively low alkali requirement, tall oil is preferred in the preparation of soaps using an expensive alkali, such as triethanolamine.(2)

As the degree of hydrogenation increases, the hardness of the soap increases, and the amount of salt required for salting out decreases. Lathering quality is inversely proportional to the hardness of the acids; and because of this property, the use of

hydrogenated tall oil has some limitations. (3)

The emulsifying and foaming powers of soaps made from purified or refined tall oil are always better than those of soaps precipitated from crude tall oil. The foaming power of soaps made from purified tall oil is as high as that of pure fat soaps; and the emulsifying power is satisfactory. A soap which has a higher emulsifying power than 100 per cent fat soaps, may be prepared from a mixture of tall oil and hydrogenated fats. Although soaps from crude oil have too low an emulsifying power, liquid soaps may be prepared exclusively from refined tall oil. (4)

Tall Oil in Other Soaps

IN PREPARING a brown laundry soap, the full boiled process is generally employed where the soapmaker intends to recover the glycerine; in this case, the tall oil should be saponified separately and added to the tallow which is then saponified. By doing this, the soap yield will be increased; otherwise, a large percentage of the fatty acids from the tall oil are lost in the "nigre." A full boiled soap is run into a crutcher and up to 50 per cent "Facoil CB" (Fatty Acid Oil)* added. The oil is saponified at 180° F. for about an hour longer than is ordinarily required in order to break down the rosin acids in the tall oil from polymers to monomers. This eliminates one of the causes for stickiness and a probable source for complaint. Then fillers are added to act as buffering agents to attain the proper pH and neutralize any soil acidity. After agitation the soap is run into frames at 149-158° F.

Tall oil may be used with whole oils, such as: corn, linseed, soya or vegetable fatty acid foots, in the manufacture of scrub or paste soaps. Although 100 per cent tall oil is being used successfully by some soapers in scrub and liquid formulae, we usually recommend 50 per cent tall oil in conjunction with any other oil, fatty acid or mixture thereof. The kettle is charged with the alkali and water and then heated to 180° F. About one per cent of a polyaminocarboxylic acid is added in the liquid form before the fatty acids are admixed at a rate not exceeding one gallon a minute. If desired, one-third of the pine oil is placed in the kettle to act as an emulsifying agent. If a firmer soap is desired, 10-15 per cent of the potash can be replaced with caustic soda.

Low surface tension of tall oil soap solutions creates a remarkable ability to form colloidal suspensions . . . making these soaps superior for degreasing metals, cleaning linoleum, tile, etc.

A typical formula for a 40 per cent liquid hand soap is as follows:

A.		
200 lbs.	.....	*Facoil CB
200 lbs.	.....	Potash at 33° Baumé
230 lbs.	.....	soya bean oil
B. (30 per cent Potash Soap)		
190 lbs.	.....	*Facoil CB
190 lbs.	.....	Linseed Oil
10 lbs.	.....	Pine Oil
92 lbs.	.....	Potash
600 lbs.	.....	Hot Water
C. (15 per cent Potash Soap)		
5 parts	....	*Facoil CB
10 parts	....	Coconut Oil F.A.
9 parts	....	50° Bé Potash
1 part	.....	Potassium Chloride
75 parts	....	Distilled Water

* Facoil, trade mark of National Southern Products Corp., New York, refined tall oils.

Mix the oils and potash at 80° C. In the above illustration, the linseed oil permits smoother boiling. Pine oil in hand and disinfectant soaps acts as a masking agent; it exerts a solvent effect thereby aiding in the removal of grease.

The following formulae are suggested for scrub soaps:

		Parts
A.	Tall Oil Potash Soap	30
	Sodium Carbonate	4
	Pine Oil	7
	Trisodium Phosphate	4
	Water	55
B.	*Facoil CB (Sap. No. 174) ...	20
	85% Caustic Potash	4
	Trisodium Phosphate	4
	Pine Oil	20
	Water	52

Tall oil can be used for textile scouring to replace all or part of the red oil content. In this application, sodium carboxymethyl cellulose tends to increase the colloidal characteristics of the fatty acid soaps. Usually, they are prepared by the semi-boiled process.

		parts
A.	Palm Kernel Oil or Coconut	60
	*Facoil CB	40
	Lye at 36° Baumé to saponify	

One or two pounds of tall oil are added for each gallon capacity of the tank to be used to prepare a soap preferred by many textile mills. When the scouring operation requires the use of free alkali or soap builders, such as soda ash, they should be used with the tall oil soap. The amount of soap builders or excess alkali should be about the same as that required for other unbuilt soaps. Tall oil soap is readily removed from the scoured textile material by rinsing and no residual odor remains after drying, but it reacts with the calcium and magnesium salts in hard water to form insoluble soaps that cause decoloration and staining of textile fabrics. Therefore, when tall oil soap is used, water softening equipment should be checked frequently to assure that the water used is of zero hardness.

It is possible to replace the entire soap requirements of most textile mills with tall oil soap. The best method for this replacement is to carry out a trial operation on as large a scale as possible with replacement with tall oil in 5-10 per cent steps. (5)

Tall Oil in Insecticides

MANY companies who manufacture agricultural and insecticide sprays have made wide use of tall oil as the insecticide sticker. In certain

types of sprays tall oil is used as an adhesive. Generally, it is used "as is" in these formulations. In some cases, it might be desirable to saponify a portion of it with caustic soda leaving a portion of the tall oil in an "as is" state for the adhesive. Thus, a combined emulsifying and adhesive agent is produced. Insects and other plant parasites are combatted with a solution of tall oil to which may be added tobacco extract, nicotine or petroleum solvents and a suitable stabilizer.

Some of the base materials used in the field of disinfectants are the sodium, potassium, ammonium and complex salts of tall oil. Disinfectants are produced by incorporating into soap solutions cresol and materials which have a high phenol coefficient. Using tall oil soaps as the emulsifying agent, general cleaners having disinfectant properties are made from tar acid oils. A stable or semi-stable emulsion may be produced by diluting the stock solution with water.

To prepare a disinfectant, an emulsion is made of tar acids or tar acid oils with "liquid sodium resinate" (tall oil soap) obtained from sulfate black liquor. A mixture of about 70-75 per cent by weight of tar acid oil (25 per cent tar acids) and 30-25 per cent by weight of liquid resinate is heated to about 75° C., then agitated until the mixture appears to be homogeneous. Enough resinate should be used to give a pH of about eight.

The preceding formula and the two that follow were prepared by Hyde. (6)

Formula No. I

	% by weight
Tar acid oil (25% tar acids)	68
Liquid resinate	30
Castor oil soap	2

Formula No. II

	% by weight
Insecticide oil	56.0
High boiling tar acids	4.0
Water gas tar distillate	8.0
Liquid resinate	30.0
Castor oil soap	2.0

The addition of water to the two formulas produces a stable emulsion type disinfectant.

The metallic soaps of tall oil are used for fungicidal applications. They are easily decomposed by the acids liberated during fungus growth processes and liberate metal ions. Another property that contributes to their applications as fungicides is their water insolubility. The two most frequently used are the copper and zinc soaps, and the copper has been found to be about five times as effective as the zinc soap. The soaps may be used to treat cloth, rope, concrete, and wood. The copper soap has been used to mildewproof cloth. Specification T-1452, Amendment No. 6 of the Corps of Engineers of the U. S. Army "Processing Sandbag Fabrics for Mildewproofing" permits tall oil to be used for extending the naphthenic acids used in mildewproofing compounds. (5)

Although most of the water-insoluble soaps find use in the paint and varnish fields as driers, the copper soaps have fungicidal properties. They are soluble in petroleum thinners and are therefore especially suitable for use in paints for coating ship bottoms.

To prepare the copper soap, the tall oil is boiled with aqueous caustic soda or potash to form the soap solution. The soap solution is then diluted to about 20 per cent solids, the temperature maintained at about 200°F. and the required amount of metal added. The metal soap is formed by double decomposition and precipitates to the bottom of the vessel where it is separated, washed with boiling water and heated to 350°F. to remove water. Copper soap has also been prepared by fusing the oxide or hydroxide of the metal directly with the oil. (7)

Liquid degreasing agents to be used for degreasing aeroplanes, automobile engines, oil tankers, the surfaces of metals that become greasy during manufacturing operations, or metal parts prior to the electro-plating operation, have been formulated using tall oil.

Saponification with caustic potash gives a jel-like soap and as much as 50 per cent of the potash may be replaced with sodium hydroxide. A sufficient amount of alkali should be added to completely saponify all the oil and to have about three per cent free alkali in the finished product. To prevent soap particles from settling out, about 15-30 per cent of cresylic acid may be added. (8)

Formula A

To remove slushing and shearing compounds and rust preventatives:

	%
Facate*	5
Sodium Orthosilicate	95

This material acts as a lifter in removing dirt, and is more efficacious than mineral salts or rosin compounds.

Formula B

	%
Facate*	5
Sodium Orthosilicate	50
Tri Sodium Phosphate	45

Any alkali may be used as an alternate in the above formulations, such as ortho, meta, or sesqui silicate.

Formula C

For cleaning Aluminum. Brass, Tin, etc.

Facate*	1 part by weight
Naphtha or mineral spirits	2 parts by weight

Add above to 10—90 per cent water

Formula D

Automotive engines (will not attack heavy metal):

	%
Facate*	15
Sodium Metasilicate	80
Soda Ash	5

Used at 4-6 oz./gallon and 180-212° F. Rinse.

* Facate is a trade name product of National Southern Products Corp. made from "Facoil CS" or CB by saponifying with caustic soda or other alkali.

Liquid Tall Oil Soap

IN some cases, when liquid tall oil soaps were prepared, manufacturers witnessed a cloudy or hazy appearance after prolonged standing. In order to extend the shelf life by making these products eye-appealing, our company has investigated this problem with a view to finding the direct cause of this situation. We soon discovered many variables. The sterols (higher alcohols, as phytosterol) or as they are commonly called, unsaponifiables, had a tendency to cause a flocculent precipitate; but, these were easily eliminated by refrigerating and filtering. Another variable appeared to be iron picked up while the tank car was in transit from the refinery to the customer's soap plant. This was detected as a reddish-brown ring around the lip of the bottle. By adding a very small percentage of a reducing agent, as sodium hydrosulfite, the ferric hydroxide was easily reduced to ferrous hydroxide.

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Soft Soap Manufacture

THE saponification values of the fish and marine animal oils and their fatty acids show such wide variation that even a tentative formula for a fish oil soap is hardly satsifactory. A typical oil charge might consist of 350 parts of one or more oils of this type, with an equivalent quantity of cottonseed oil and about 100 parts of rosin; together with 15 to 20 parts potassium carbonate and possibly seven to 10 parts potassium chloride. Saponification to be started with weak 18° Bé lye and finished with 27° Bé lye. Such soaps were formerly filled, if desired, with a caustic potash-treated potato starch dispersion.

Soft Soap From F.A.

	lbs.
Soybean fatty acids	440
Oleine	100
Caustic potash lye (27° Bé)	455
Rosin	25
Potassium carbonate	30
Water, about	50-100

See also the notes (Part I) regarding the increasing utility of fatty acids in soft soap manufacture. Good grades of distilled and fractionated fatty acids compare favorably with the original oils in economy, performance and ease of handling.

Tropical Soft Soap

	parts
Cottonseed oil	70
Soya bean oil	10
Bone grease	10
Rosin	10

Finished as a 40 per cent f.a. soap, this is a charge suggested by Dr. N. G. Chatterjee (*Indian Soap Journal*, April 1937). The oil is taken in a kettle provided with both open and closed steam coils, and a certain quantity of water and cold caustic potash solution of about 54° Tw. are run in and kept for about an hour, before turning on the open steam. After the contents of the kettle have risen, the quantity of water is properly adjusted, due regard being paid to the water from the condensed steam accumulating in the kettle. It is a good practice, considers Dr. Chatterjee, to keep in reserve about 10 per cent of the oil charge for addition to the kettle towards the close of the operation, utilizing it for bringing up the content of fatty anhydrides and reducing the free alkalinity of the finished soap. During the initial stages of soap boiling 1.75 per cent of pearl ash (containing about 97 per cent potash carbonate) previously dissolved in water is added to the kettle, while a similar quantity of potassium chloride as solid powder is added at a later stage. The addition of these substances is supposed to give a better appearance to the finished product. It need hardly be mentioned that in order to effect easy boiling the kettle is kept open and somewhat on the alkaline side, and it is only towards the end that it is closed and adjusted by the addition of the oil which has been kept in reserve. The kettle is finally cleansed by opening a discharge valve at the bottom and running the soap directly into the containers.

The same writer also suggests a "high rosin soft soap," based for example on 67 parts of cottonseed oil and 33 parts rosin. As he points out, this type of product is not very easy to handle. He suggests a charge of seven cwt. in a 25 cwt. capacity kettle. Owing to the fact that high rosin soaps are thicker in the hot state than in the cold, such soaps are finished in a very dense condition, and samples will be found to soften up on cooling. For obvious reasons they should be

By J. M. Vallance

PART II

finished either absolutely neutral or even a trifle short (0.02 per cent), whereas normally the balance is slightly on the alkaline side. In small works, kettles of high rosin soap are emptied by removal from the top, due to the difficulty of dropping out the batch through the bottom discharge valve.

Textile Soft Soaps

	lbs.
Linseed oil	60
Corn oil	50
Palm oil	10
Rosin	3
Caustic potash lye (18° Bé)	160

This formula for a figged soft soap for wool scouring was suggested some years ago by Franklin L. Grant. Other wool-scouring potash soaps may be based on cottonseed oil, olive oil foots, etc., sometimes hardened up with a little NaOH lye or containing a few per cent of pearl ash. Some interesting kettle charges are given in Thomssen & Kemp's "Modern Soap Making," which also notes the use of somewhat similar soaps for silk degumming.

The following formula for a dry cleaning soap is taken from the Pharmaceutical Recipe Book of the American Pharmaceutical Association.

Dry-Cleaning Soap

	g.
Oleic acid	370
Stearic acid	80
Potassium carbonate	80
Water	70
Benzine	395
Solution of ammonia (28%)	5

Melt the stearic acid and incorporate with it the warmed oleic acid. Then add the benzine, carefully warmed, and mix thoroughly. Stir the potassium carbonate mixture, previously dissolved in the water, into the benzine mixture, with continued agitation. Finally add the ammonia solution and beat into a homogenous paste. If desired, 8 c.c. of ethylene dichloride may be incorporated into 100 g. of this soap.

Hand-Cleaning Paste

	g.
Soft Soap	500
Carbon tetrachloride	50
Methyl cyclohexanol	20
China clay	100
Tripoli	130
Potassium carbonate	10
Solution of ammonia	40
Water	150

This type of formula illustrates the use of soft soap as a base for detergent specialties. In the above, the water content will require adjusting in accordance with the type of clay and grade of tripoli used.

Soft Soap Shampoos

	g.
Linseed oil fatty acids	100
Cóconut oil	120
Peanut oil	100
Glycerin	50
Potassium carbonate	20
Softened water	435
KOH (90/94%, solid)	55
NaOH lye (27° Bé)	70

This formula may be further diluted for retail sale to give a 60 per cent water content soap or, for sale to beauty parlors as a "concentrated" soft soap, it may be finished with rather less water than is given above.

Transparent and opaque jelly shampoo soaps may be basically potash/coconut, potash/coconut/olive or potash/coconut/castor soaps; sometimes with additions of glycerin, alcohol, etc. More drastic modifications are apparent in paste shampoos, which sometimes contain soda soaps as well as potash soaps.

Other Soft Soaps

SOFT soaps, mostly of a readily soluble, paste-like character, are obtainable by neutralizing fatty acids with ammonia, triethanolamine, triisopropanolamine and other organic basic compounds. Ammonium soaps, though more soluble than corresponding potash soaps, are nevertheless unstable, with the tendency to split off ammonia and form acid soaps. They find application chiefly as emulsifying agents.

The mild and soluble ethanolamine soaps are also useful emulsifiers; they find some application, too, as general detergents in shaving creams and shampoos. Ethanolamine soaps react with potash soaps to form double salts of potash and ethanolamine. In consistency, the soaps of triethanolamine are somewhat more viscous than the fatty acids from which they are derived, and in color somewhat darker, depending upon the oxidizing tendencies of the acid. It is customary for the oleate, for example, to become a dark red within a few days of its preparation without, however, any injury to its effectiveness. On the other hand, the stearate, if prepared from a pure stearic acid, remains light colored. The softer soaps, particularly triethanolamine oleate, have the outstanding property of being both water and oil soluble and can be incorporated with oils and organic solvents to form soluble oils, dry-cleaning soaps and textile scouring and wetting agents. Among the interesting properties of triethanolamine soaps is the low alkalinity of their water solutions, the pH value of the fully neutralized soaps being approximately eight. Moreover, when combined in small proportions with sodium and potassium soaps, they act to buffer their alkalinity and may tend to improve texture.

Manufacturing Procedure

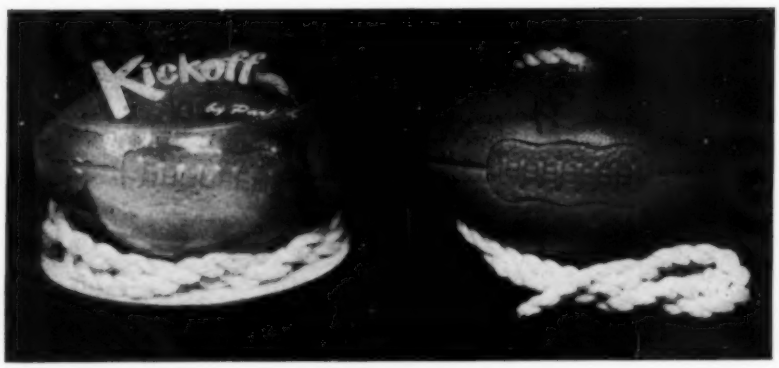
MANUFACTURING methods are all based on the semi-boiled process, i.e. there is no settling out of nigre and all of the glycerin present in the oils and fats remains in the fin-

(*Turn to Page* 90)

WHAT'S

The "Shave Bucket" (above), latest addition to the line of Gourielli, New York, serves a two-fold purpose. When the shaving cream in the hammered aluminum bucket is all used, the miniature replica of an ice bucket can be employed for the purpose for which it was intended.

A soap novelty to delight small boys is "Kickoff," a cake of soap resembling a football. For shower use, a wrist cord has been attached. Item is featured by Parfait Sales, Chicago, for distribution through boys' departments and cosmetic counters of department stores.



"Odor Ban Electric Deodorizer" set (left) includes plug-in dispenser, upper right, vial and tablets, which are inserted in plug-in unit and complete instruction sheet. Cauhorn Distributing Co., Detroit, is handling the item, which retails for $1.69.

'S NEW?

"No-Rinse Surf," introduced recently by Lever Brothers Co., New York, does not, as the name implies, require rinsing in clothes washing, according to the maker. Above, left and right, are rear and front panels of the package for the new product.

Display stand for Wrisley toilet soap was designed and produced by River Raisin Paper Co., Monroe, Mich. Its use is stated by Wrisley to have been very successful in both drug and department store divisions.

As part of the introductory promotion on its new "Aquamarine" soap, Revlon Products Corp., New York, is featuring the combination offer below. The soap comes in hand and bath sizes to retail three for $1 and three (five-ounce cakes) for $1.50. The hand size cake is three ounces.

Chemicals

FOR THE PROCESS INDUSTRIES

WITH stocks located in strategic cities throughout the country, Joseph Turner & Co. is meeting the current trend to minimum working inventories.

INQUIRIES directed to any of our offices will bring our usual prompt and courteous response.

There's still no substitute for experience.*

* Serving Industry Since 1861.

JOSEPH TURNER & CO

83 Exchange Place, Providence, R. I. **RIDGEFIELD, NEW JERSEY** 435 N. Michigan Ave., Chicago, Ill.

TRADE NEWS

C. F. Brannan 23rd Soap Meeting Speaker

JOHN O. BROWNELL

CHARLES F. BRANNAN

SECRETARY OF AGRICULTURE, Charles F. Brannan, will speak again at the coming 23rd annual convention of the Association of American Soap & Glycerine Producers, to be held Wednesday and Thursday, Jan. 25 and 26, at the Hotel Plaza, New York. Mr. Brannan will speak at the luncheon on Thursday. He was the key speaker at the banquet of last year's meeting. In addition, J. C. Fauré, chief purchasing agent of Unilever, Port Sunlight, England, an international authority on fats and oils, will discuss the world outlook for those materials. He is scheduled to speak on Thursday morning from 10 to 11.

Other highlights of the convention include the annual business meeting of the A.A.S.G.P. on Wednesday afternoon, Jan. 25, at which time officers for the coming year will be elected. Charles Luckman, president of Lever Brothers Co., Cambridge, Mass., and president of the association, will preside.

In addition to having division meetings run in succession, rather than concurrently, as has been done in past years, another change is the elimination of panel meetings with prominent experts slated instead to conduct division discussions. The switch from concurrent to successive division meetings was described by John O. Brownell, general sales manager of Lever Brothers Co., and chairman of convention arrangements, as an effort to enable all members of the industry to participate in every group meeting.

Other convention speakers and experts, whose names will be announced later on, have been assigned to cover such subjects as synthetic detergents, bulk soaps, market research, industrial relations, specialty soaps and glycerine.

An innovation of the meeting is a program designed for women guests. A one-hour fashion show, from 2:30 to 3:30 p.m. on Wednesday, January 25, will be presented under the auspices of National Cotton Council.

Social highlights include a cocktail party on Wednesday from 6:00 to 8:00 p.m., the host for which will be *This Week* magazine, and a breakfast on Thursday morning from 7:15 to 9:30, sponsored by *True Story*. The annual Association reception, banquet and entertainment will be held Thursday evening, beginning at 7:30. A prominent national figure will give an address at the banquet.

Assisting Mr. Brownell and his committee aides for the convention are Roy W. Peet, A.A.S.G.P. manager and his assistants, Frank Luther and Malcolm W. Miller.

Strike at Lever Soap Plant

More than 950 employees of the soap plant of Lever Brothers Co., Cambridge, Mass., struck Nov. 14 in a dispute over the rating given employees operating 40 new soap-making machines. The dispute, according to Daniel F. Daly, local president of the Chemical Workers Union, AFL, is five months old.

Det. Output Billion Lbs.

Synthetic detergent production will reach a billion pounds in 1949, and in 10 years the annual output will reach three billion pounds. These predictions were made in a recent address by Lawrence H. Flett, director of the new products division of National Aniline Division, Allied Chemical & Dye Corp., New York, speaking at a meeting in Detroit of the American Institute of Chemists, of which Mr. Flett is president. He stated that industrial demand for synthetic detergents is largely responsible for the increase in production. According to Mr. Flett every large industry in the United States already is using synthetics to speed up production or turn out better products. Their numerous applications were cited by the speaker as being responsible for the immense gains made in their output in the last few years.

Retired P. & G. Man Dies

Timothy D. Hagerty, 74, an employee for 35 years until his retirement from Procter & Gamble Company's plant on Staten Island, died at his home in Roselle, N. J., recently.

P&G Earnings Increase

Procter & Gamble Co., Cincinnati, reported a net profit of $19,737,322, equal to $3.07 a common share, for the quarter ended Sept. 30, 1949. In the same quarter, last year, earnings of $13,221,916, or $2.05 a share were reported. Net income after charges, but before taxes, amounted to $30,597,322, compared with $21,181,916, a year earlier.

Test New "Sum" Soap

Test marking of "Sum," a new washing compound made by Sum Soap, Inc., Chicago, was begun recently in Rockford, Ill. The new product is said to be a combination of soap, sequestering agent and "Sumozone" bleach. "Sum" is packaged in blue, green and white containers, 12⅝ ounces retailing for 33 cents. A coupon worth 10 cents was part of the initial 10-day trial offering featured in Rockford newspaper advertising. Sum Soap, Inc., the manufacturer, was established earlier this year with Howard Conant as president and Joseph Einstein as vice-president. At present, promotion efforts are concentrated on a single market, but it is hoped that these can be expanded and distribution possibly become national. Before the test marketing was begun, samples of the product along with questionnaires were distributed to a limited number of Chicago housewives in an effort to obtain consumer reaction to the new cleanser.

Waldo L. Behr Dies

Waldo L. Behr, 56, treasurer and manager of Wayne Soap Co., Detroit, died recently in Cottage Hospital, Grosse Pointe Farms, Mich. He is survived by his wife, Pauline C.; two daughters, Barbara Jane and Mary Ann, and two brothers, Edgar G. and Herbert C.

Tussy Names Robinson

The appointment of Joseph Robinson as its New England representative was announced recently by Tussy Cosmetiques, New York. He succeeds the late James J. Clifford. Previously Mr. Robinson was assistant to Mr. Clifford in New England and New York state, and to Al Bergstrom sales representative in the midwest territory.

DR. ALLEN L. PARKER

Parker in Shulton Post

Dr. Allen Lee Parker, formerly plant manager for Dodge & Olcott, Inc., a subisdiary of U. S. Industrial Chemicals, Inc., New York, recently joined Shulton, Inc., New York. He is in charge of chemical engineering and chemical research at the firm's new plant in Clifton, N. J.

Packaging Show Apr. 24-27

The 19th National Packaging Exposition will be held April 24-27, 1950, at the Navy Pier, Chicago, it was announced recently by the American Management Association, sponsors of the affair. An attendance of 14,000 is expected for the meeting at which machinery and materials used in all phases of packaging will be exhibited. There will also be clinics and discussion of all aspects of packaging and packaging problems.

Safety Award to Fritzsche

For their continuing record of no employee time lost due to accident, Fritzsche Brothers, Inc., New York, were recently awarded the plaque of the State Insurance Fund of New York.

C-P-P Man Dies

Frederick T. Wienandt, 61, a raw material sampler with Colgate-Palmolive-Peet Co., Jersey City, N. J., died Nov. 9, at his home in Jersey City.

New Plastic Cleaner

A new liquid cleanser for removing unwanted lacquer, grease stains, mold lubricants and foreign matter from polystyrene (plastic) surfaces was introduced recently by Schwartz Chemical Co., New York. The trade name of the new compound is "Poly-Kleen".

Bon Ami Net Down

Bon Ami Co., New York, reported a decline in its earnings for the first nine months of 1949 to $291,131, equal to $3 a Class A share and 3 cents a Class B share, from $565,149, or $3 and $1.41, respectively, a year ago. Income taxes of $196,366 were reported for the period, as compared with $335,811 in 1948's first nine months. Net profit for the six months ending June 30, 1949 amounted to $200,242, equal to five cents a share on Class B stock, against $407,740 or $1.09 a Class B share in the first half of 1948.

Lewis Aids Hospital Fund

Ralph P. Lewis, president of Harriet Hubbard Ayer, Inc., New York, was recently named chairman of the Cosmetics Division for the 1949 campaign of the United Hospital Fund. As chairman of the Cosmetics Division, Mr. Lewis is directing the activities in that industry in raising its share of the $3,367,000 needed by the Fund this year to help meet the expenses of its 86 member, voluntary hospitals in their services to patients who can pay only part, or none, of the cost of their medical care.

Blackman Joins Pessl

Paul D. Blackman was recently appointed sales and advertising manager of Helene Pessl, Inc., New York, makers of children's toiletries. He was recently with Bellin Wonderstoen Co., New York, in a similar capacity.

Cleaning Compound Firm

A newly organized firm to manufacture cleaning compounds was formed recently under the name Kleenzit Corp., Brownsville, Tenn. Harry Naylor is president and David Phillips is plant manager.

Every one a self-seller—every one a Duraglas bottle!

These bottles help give your brand the edge

• Why? Duraglas bottles are *functioneered* so that the product they contain has a better chance to win in the battle for sales!

Through Home Makers' Guild Surveys, housewives tell us the features and functions they want most in a container. Then we functioneer a Duraglas bottle to exactly meet their preferences.

Take the 6-oz. liquid detergent bottle as pictured. It has these features and functions women want:

- Clear visibility, so they can see how much is inside.
- Compact shape, to fit neatly in limited shelf space.
- Easy, dripless pouring.
- Fits hands comfortably.
- Opens easily, reseals tightly.
- Is stable and sturdy.

BUT there is more to functioneering than pleasing consumers. Duraglas bottles are designed for highest efficiency on your filling line. They are economical and dependable protectors of your product . . . exactly right for *sales!*

Duraglas Bottles are Protectors of Quality

OWENS-ILLINOIS GLASS COMPANY • TOLEDO 1, OHIO • BRANCHES IN PRINCIPAL CITIES

Soap Sales Up in Third Quarter

SOAP sales in terms of pounds increased during the first nine months of 1949, as compared with the first three quarters of last year, although dollar volume, reflecting lower prices, was considerably under the 1948 figure. Total sales during the first three quarters of 1949 amounted to 1,947,993,000 pounds, having a value of $365,657,000. In the comparable period a year ago soap shipments totaled 1,944,103,000 pounds, with a value at plant of $516,817,000, which was believed to be a record high for sales in terms of dollars. The 1947 dollar total for the first nine months of the year was larger also than the 1949 figure.

Total sales of liquid soaps on a gallons and dollar basis for the first nine months of this year were reported as 4,471,000 gallons and $5,717,000, respectively. This compares with 2,383,000 gallons, worth $3,095,000, for the corresponding period of a year ago.

Production of synthetic detergents as reported by the 35 manufacturers participating in the census was put at 514,289,000 pounds, worth $109,208,000 for the first three quarters of 1949. In the comparable period a year ago, the pound and dollar figures were 281,488,000, and $80,294,000, respectively. However, since more manufacturers reported in the first three quarters of 1949, the totals for the two periods are not comparable. In the third quarter of 1949, 706,845,000 pounds of other than liquid soap, valued at $130,979,000, were produced.

Total sales of other than liquid soaps in the first quarter of 1949 were reported as 614,621,000 pounds, with a sales value of $119,893,000; in the second quarter, the total was 626,527,000 pounds, worth $114,785,000.

Liquid soap production amounted to 1,697,000 gallons, worth $2,555,000, for the third quarter, 1949. In the previous two quarters the figures were: 1,331,000 gallons, worth $1,515,000, and 1,443,000 gallons, valued at $1,647,000 for the first and second quarters, respectively.

In 1948's third quarter total other than liquid soap production was put at 655,506,000 pounds, worth $149,850,000. Liquid soap figures for the same period show 680,000 gallons reported shipped, with a value of $1,242,000.

All of the above figures are based on the totals submitted by all manufacturers participating. The number is the highest on record.

On the comparative totals, those based on figures supplied regularly by 56 manufacturers show production of other than liquid soaps for the third quarter of 664,059,000 pounds, worth $126,167,000, as compared with 607,569,000 pounds, valued at $112,010,000 in the second quarter and 600,127,000 pounds, worth $117,758,000, produced in the first quarter of 1949. The third quarter of 1948 total shows 652,000,000 pounds, worth $149,444,000 turned out.

Comparative liquid soap sales figures from the 37 manufacturers reporting regularly show a third quarter, 1949, total of 655,000 gallons, worth $801,000. In the preceding two quarters of the same year, the totals were: 700,000 gallons, at $971,000, and 666,000 gallons, worth $877,000, for the second and first quarters, respectively. The comparative total for 1948's third quarter was 535,000 gallons, with a value of $677,000.

Toilet Goods Section Meets

The annual meeting of the scientific section of the Toilet Goods Association will be held at the Starlight Roof of the Hotel Waldorf-Astoria, New York, December 7. A group luncheon will be held at 12:30 p.m. Papers will be presented at the meeting as follows:

"The Fatty Alcohol Sulfates for Shampoo" by R. Pantaleoni, J. A. Shanks and E. Valentine, E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.; "Fragrance and Stability of Cosmetics with Especial Reference to the Acetals" by Carl K. Wellenkamp, Verona Chemical Co., Newark, N. J.; "Factors in the Determination of Odor Intensity in Mouth and Expired Air" by R. R. Read, P. P. Morris and W. G. Fredell, Lambert Pharmacal Co., New York; "A Discussion of Certain Pharmacological Procedures as Applied in the Testing of Cosmetics" by John H. Draize and Elsie Alvarez, Food and Drug Administration, Federal Security Agency, Washington, D. C.

"Cosmetic Emulsions" by Saul A. Bell, Evans Research and Development Corp., New York; "Anosmic Reactions to Odors" by Dean Foster, Joseph E. Seagram and Sons, Inc., New York; "Pharmacological Agents in Cosmetic Formulation" by Dr. Lloyd W. Hazelton, Hazelton Laboratories, Falls Church, Va.; "The Pilot Plant. Part 1. Why a Pilot Plant is Necessary in Drug and Cosmetic Development" by P. C. Wieseman, Laboratories of the Norwich Pharmacal Co., New York.

Win Advertisement Honors

Advertising campaigns of Armour Toiletries, Chicago, and Shulton, Inc., New York, were among those appearing in the 1948-1949 edition of the Blue Book of Newspaper Advertising, published annually by the Bureau of Advertising, American Newspaper Publishers Association. The campaigns selected for the edition were Armour's "Dial" and Shulton's "Desert Flower Toilet Water" advertisements.

Chosen from campaigns submitted in answer to the Bureau's annual invitation for entries, the case histories making up the 1949 volume represent the work of 40 different agencies and include 15 classifications of national advertising.

The immediate results of the "Dial" campaign were reported as "sensational." Within a week of the opening full-page color advertisements, almost all of the large department stores had run out of stock and were forced to reorder. Supplies of "Dial" in Chicago drug outlets were depleted so rapidly, the book reported, that Armour had to use special trucks to replenish the stocks.

Crowley Alsop Head

Charles E. Crowley, who has been associated with the firm for 27 years, was recently elected president of Alsop Engineering Corp., Milldale, Conn., at a special meeting of the board. He succeeds the late Samuel Alsop, Sr. Other officers of the company are Samuel Alsop, Jr., first vice-president; W. W. Freystedt of New York, second vice-president; James J. Shea, third vice-president; E. Z. Ross, secretary and treasurer, and C. Clark Morganson, assistant secretary.

P&G Has Good Year, to Split Stock

THE company's soap and shortening business "has been good and has gone ahead on a countrywide basis" during the past year, Richard R. Deupree, chairman of the board of Procter & Gamble Co., Cincinnati, told stockholders at the recent annual meeting. In view of unpredictable factors in the selling situation faced by the company and unsettled raw material markets, the company's achievements were said by Mr. Deupree to be especially good. In discussing the recent wave of currency devaluations, he said "their immediate effect upon us . . . in various countries is neither good nor bad, so far as we can judge." Net earnings of foreign subsidiaries of P&G during the past fiscal year totaled more than $7,000,000. Mr. Deupree cited his firm's leading position in advertising, research and mass production economies and its benefits for consumers.

Directors reelected at the meeting, including Mr. Deupree, were: Floyd M. Barnes, R. K. Brodie, Frank F. Dinsmore, Charles W. Dupuis, Cecil H. Gamble, Frederick V. Geier, H. C. Knowles, Neil H. McElroy, William Procter, Reuben B. Robertson, Jr., Ralph F. Rogan, J. J. Rowe and T. J. Wood.

Compensation for the fiscal year, which ended June 30, and shares of stock held by directors of P&G were recently listed as follows: Richard R. Deupree, chairman, received $214,622 for the fiscal year and held 11,000 shares of common stock on Sept. 6; Neil H. McElroy, president, was paid $172,111, held 500 common shares; Renton K. Brodie, vice-president, was paid $119,500, owned 2,000 common and 60 preferred shares; Cecil H. Gamble held 19,547 common and 133 preferred shares; William Procter held 28,683 common shares; Ralph F. Rogan held 36,187 common shares, and eight other directors held between 200 and 9,120 common shares each.

The board recently proposed a stock split plan, whereby each share would become one and one-half shares. The board also recommended that the authorized number of common shares be increased from 7,500,000 to 15,000,000. To preserve the relative voting power of the company's eight per cent preferred stock, the board further recommended that the voting power of the shares be increased from one vote for each share to one and one-half votes per share. A special meeting of stockholders was called for December 20, to vote on the proposals.

RICHARD R. DEUPREE

Van Ameringen Relocates

Home offices and laboratories of Van Ameringen-Haebler, Inc., New York, were recently moved to 521 W. 57th St. The company's executive and general offices, perfume laboratories, storage, compounding and perfume manufacturing facilities are all accommodated on one floor and an adjoining floor of the next building. The new quarters, which provide about 35,000 square feet of floor space, are completely air-conditioned. In addition to lounge and smoking rooms, kitchen facilities and a dining room large enough to accommodate 30 people are available for employees.

Hunnewell Elects Bywaters

Hunnewell Soap Co., Cincinnati, has elected E. M. Bywaters as vice-president to succeed George I. Talley, who has retired because of illness after thirty years with the company, according to an announcement by Leslie Webb, President of Hunnewell. Also at a meeting of stockholders on Nov. 15, Chalmers A. Young was elected a director and chosen secretary-treasurer to succeed Mr. Bywaters, who formerly held this office. Mr. Webb continues as president. Mr. Talley was for some years in charge of western sales for the company and was well known in the industrial soap field. Hunnewell, which was founded in 1835, is said to be the oldest manufacturer of industrial soaps in America.

Smith Joins MRM

Samuel S. Smith, formerly sales manager of Precision Gear, Inc., was recently named general manager of the liquid filling division of MRM Co., Brooklyn. At one time Mr. Smith was with Ertel Engineering Co.

George M. Dunning Dies

George M. Dunning, 61, eastern sales manager of Wyandotte (Mich.) Chemicals Corp., died suddenly Nov. 16 on board a commuter's train on his way to his home in Bronxville, N. Y. A native of New York, when he was 16 years old, he went to work for Edward Hill's Sons & Co., which later became Michigan Alkali Co. of New York, and eventually becoming consolidated into Wyandotte Chemicals Corp. He was a member of the Chemists' Club and the Sales Executives Club. Mr. Dunning is survived by his widow, Mrs. Frances L. Dunning; a son, George M. Dunning, Jr., and three daughters, Misses Frances Virginia and Dorothea Dunning and Mrs. Audrey Neuberg.

New P & G Product

Officials of the Procter & Gamble Co., Cincinnati, have announced the appointment of Young & Rubicam, Inc., New York, as the advertising agency to work on development of a new product.

Quaker Soap Union Vote

Employees of Quaker Soap Company's plant in Secaucus, N. J., voted 38 to 3 to have the Quaker Independent Union as their collective bargaining agent, it was announced in New York recently by the National Labor Relations Board.

ORONITE CHEMICAL COMPANY

REG. U. S. PAT. OFF.

THE NAME TO WATCH IN CHEMICALS

FOR A QUICK WASH CHOOSE D-40 DETERGENT

If you want to improve washing operations or make superior cleaning compounds, it will pay you to investigate D-40 Detergent. This outstanding product provides high surface activity in extremely low concentrations, quick solubility in hard or soft water. And, because of the superior quality of this synthetic detergent, new economies in washing and cleaning operations are continually being found.

Fast penetration, shorter wetting times, excellent soil removal and easier rinsing are but a few of the many advantages of D-40 Detergent. So, if you want to improve the wash, or increase the performance of cleaning compounds, ask for D-40 Detergent.

A typical example of improved washing methods is the use of D-40 Detergent in commercial steam cleaning operations. Here, the high surface activity of D-40 helps cut grime and grease from buildings, machinery, metal parts, vehicles, heavy equipment, etc. The quick penetration and soil suspension of this superior product make it ideally suited for all kinds of tough cleaning operations. Remember, for cleaner, faster washing choose D-40 Detergent.

1911

ORONITE CHEMICAL COMPANY

38 SANSOME STREET, SAN FRANCISCO 4, CALIFORNIA
STANDARD OIL BLDG., LOS ANGELES 15, CALIFORNIA
30 ROCKEFELLER PLAZA, NEW YORK 20, NEW YORK
600 S. MICHIGAN AVENUE, CHICAGO 5, ILLINOIS

Filtrol Agents Meet

Operating heads of the international distributing organization of Filtrol Corp., Los Angeles, gathered there recently for a five-day technical conference. During the visit, foreign agents from the British Isles, Belgium, Colombia, Venezuela, Denmark, Holland, Mexico, New Zealand and the Philippine Islands saw Filtrol's new Vernon plant, said to be the world's largest natural catalyst, adsorbent and desiccant manufacturing unit. In addition, under the direction of Wright W. Gary, president, and Standard R. Funsten, sales manager, the group reviewed the latest technological improvements in oil refining. A special technical session was held to study the latest American methods of fatty oil refining and other phases of the company's operations.

Photograph (above) taken during recent meeting in Los Angeles of Filtrol Corp. foreign representatives.

Eli Winkler Is Dead at 76

Eli Winkler, 76, chairman of the board of the United States Alkali Export Association, until his retirement two years ago, died of a heart attack, Nov. 10, at his home in New York. At one time he was sales director and consultant of Columbia Alkali Division of Pittsburgh Plate Glass Corp. He was also one of the original founders of Carman & Co., of Ohio, a sales distribution firm of chemical specialties, and had been a member of its board of directors since its inception.

Guenther Boston Lectures

The first two of three lectures dealing with essential oils were given in Boston recently by Dr. Ernest Guenther, vice-president and technical director of Fritzsche Brothers, Inc., New York. Dr. Guenther's first lecture, "The Production of Essential Oils in Africa," was given at Massachusetts Institute of Technology, the evening of Nov. 3, at a meeting sponsored by the Northeast Section of the Institute of Food Technologists. The second lecture, "Essential Oil Production in the Far East," like the first, was accompanied by motion pictures in color. Given Nov. 21, it was sponsored by the Boston section of the American Association of Candy Technologists. "Essential Oil Production in the Western Hemisphere." The third and final lecture is to be given early in January. It is to be sponsored by Dr. B. E. Procter's student group of Food Technologists of M.I.T.

Wrisley Earnings Rise

Increased earnings for the year to Oct. 8, 1949, as compared with the period to Sept. 25, 1948, were reported recently by Allen B. Wrisley Co., Chicago. A net income of $189,602, equal to 59 cents a share on net sales of $7,384,678 was reported for the first 40 weeks of this year, as against a net loss of $411,956 on sales of $6,309,-124 for the 39 weeks to Sept. 25, 1948.

Kessler Forms Affiliate

The formation of a sales affiliate, Kessco Chemicals Corp., was announced recently by Kessler Chemical Co., Philadelphia. Maurice J. O'Connor has been appointed sales manager of the new firm, and makes his headquarters at the Philadelphia plant of the parent company. A mid-western office of Kessco was opened recently at 335 N. Michigan Ave., Chicago 1, with Stanley F. Choate in charge. In addition, it was announced the technical service laboratory of the company is being expanded. W. W. Angus, Inc., New York, and M. F. Robie and Sons, Braintree, Mass., represent Kessco in the New York and New England areas, respectively.

Packaging Institute Elects

Carl E. Schaeffer, Stokes & Smith Co., Philadelphia, and John A. Warren of the engineering department of American Home Products Corp., New York, were elected directors to serve for three years by the Packaging Institute, Inc., at its recent 11th annual meeting in New York.

Syntomatic Names Breuer

The appointment of H. O. Breuer as its representative in Mexico and Central America was announced recently by Syntomatic Corp., New York. Mr. Breuer, who makes his headquarters at Lomas De Chapultepec, Mexico, D. F., represents the firm on its line of perfume oils, essential oils and aromatic chemicals.

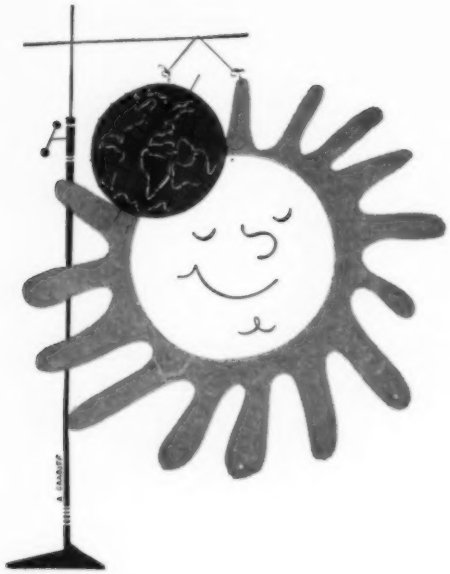
Detrex Names Ehlert

E. H. Ehlert, manager of the Detroit industrial sales office of Detrex Corp., Detroit, was recently appointed as regional manager of chemical sales and industrial cleaning equipment for mid-western states. He is making his headquarters in Chicago. Mr. Ehlert has been with the firm since 1943, when he joined the field sales and service staff.

W. J. Miller, who also joined Detrex in 1943, has been placed in charge of field application of Detrex alkali and emulsion cleaning compounds and coating materials for mid-western states.

In Hercules CMC Posts

Two changes in personnel connected with the sales and development of sodium carboxy-methyl-cellulose were announced recently by Hercules Powder Co., Wilmington, Del. Leland H. Burt, CMC product supervisor since 1946, has been appointed supervisor of development, and Werner C. Brown has been placed in charge of sales. Mr. Brown has been with Hercules since 1942, when he joined the firm as a chemist in the experiment station. Since April, 1947 he has been supervisor of the experiment station's cellulose products division.



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Soaps, Sanitizers at Hotel Show

SOAPS, synthetic detergents, waxes, insecticides, disinfectants and other sanitation products were shown in 20 exhibits at the 34th National Hotel Exposition, held at Grand Central Palace, New York, Nov. 7-10. The show was held under the auspices of the New York State Hotel Association and the Hotel Association of New York City, Inc. A new synthetic cleanser, marketed under the trade name, "Neo-Glo", and designed for use on rugs and upholstery was featured at the exhibit of Neo-Glo Products Co., New York. Similarly, detergents for cleaning rugs and upholstery were shown by Von Schrader Manufacturing Co., Racine, Wis., and by Empire Products Co., Newark, N. J. A new synthetic laundry detergent, "Skortex" was exhibited by Wyandotte Chemicals Corp., Wyandotte, Mich. A new soap builder "Arloc", designed for use with soap products in laundry operations, was also shown by Wyandotte. A new, bead form, synthetic detergent was featured at the booth of John T. Stanley & Co., New York, where samples of the cleaner, for washing such fabrics as "Nylon", rayon and celanese were distributed. "Klorlene", a new spot remover, was featured by Kwik Products Co., New York, which also showed its general line of cleaning, polishing and mothproofing preparations.

Dishwashing compounds for hand and mechanical operations and of the germicidal variety were on display at the booths of Camp Chemical Co., Brooklyn, Economics Laboratory, Inc., St. Paul; Kelite Products, Inc., Mineola, N. Y. and R. B. Martie Co., New York.

Other companies displaying soaps, synthetic detergents and other cleaning supplies were: Armour & Co., Chicago; Bigelow-Sanford Carpet Co., New York; Lever Brothers Co., Cambridge, Mass.; Long Island Soap Co., New York; John Sexton & Co., New York; Procter & Gamble Co., Cincinnati and West Disinfecting Co., Long Island City, N. Y.

American Aerovap, Inc., New York, featured its insecticide dispenser, "Aerovap", which is fitted with a thermostatically controlled vaporizer. Other firms displaying insecticides were Camp Chemical Co., Brooklyn; John T. Stanley Co., New York; John Sexton & Co., New York, and West Disinfecting Co., Long Island City, N. Y.

An air freshener and deodorant was shown by Active Buying Corp., New York. Another air freshener was exhibited by Howard J. Barrett, Philadelphia, who featured the "Ozium" pressurized hand sprayer made by Woodlets, Inc., Portland, Pa., a subsidiary of G. H. Wood & Co., Toronto.

DCAT Dinner Mar. 9

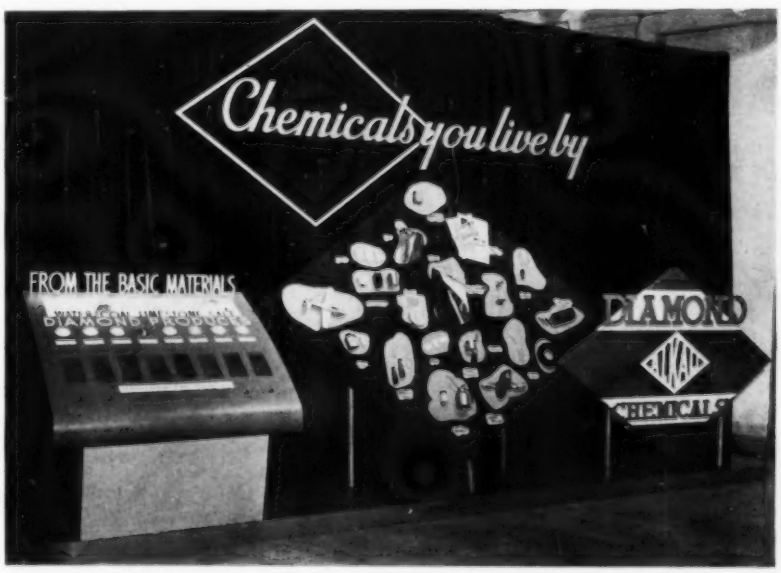
The 24th annual dinner of the Drug, Chemical and Allied Trades Section of the New York Board of Trade will be held at the Waldorf-Astoria Hotel, New York, Thursday evening, Mar. 9. In addition, it has been announced that a mid-winter luncheon meeting will be held late in January and the Section's 60th annual meeting is scheduled for Sept. 21-23, at Shawnee Inn, Shawnee-on-Delaware, Pa. The following committee chairmen for 1949-50 have been announced by Harold C. Green of L. Sonneborn Sons, Inc., New York, DCAT chairman:

E. L. Shattuck, Abbott Labs., arbitration; Gerald L. Smith, American Home Products Co., auditing; Lloyd I. Volckening, Ivers-Lee Co., bulletin; Carle M. Bigelow, Calco Chemical Division, American Cyanamid Co., coordination committee; Hugh S. Crosson, McKesson & Robbins, Inc., finance; James G. Flanagan, S. B. Penick & Co., legislative; Charles M. Macauley, Pro-phy-lac-tic Brush Co., membership; Murray Breeze, Murray Breeze Associates, Inc., publicity; Charles P. Walker, Citro Chemical Co., Section activities. Vice-chairmen: Claude A. Hanford, Pharmaco, Inc., membership; F. M. Schwemmer, Ruthrauff & Ryan, Inc., public relations.

'Glamur' Sales Rep. Named

All sales of "Glamur" rug and upholstery cleaner to food outlets are being handled by Lewis-Martin Corp., New York, it was announced recently by Jack Hosid, president of Hosid Products, Inc., Syracuse, manufacturer of the product. A sales campaign on behalf of the product will begin in the New York area.

An illuminated display for exhibition at trade shows was developed recently by Diamond Alkali Co., Cleveland, O. The display is designed to indicate the various applications of the chemical products made by the company.



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OIL BOUQUET C No. 613	@ 2.50 per lb.

For LIQUID SOAP

OIL BOUQUET E.C. No. 618 Water Soluble	@ $2.75 per lb.
OIL BOUQUET E.T. No. 618 Water Soluble	@ 2.25 per lb.
OIL HONEYSUCKLE No. 61 Water Soluble	@ 2.85 per lb.
OIL NARCISSUS No. 614 Water Soluble	@ 2.25 per lb.

SHAMPOO ODORS

OIL BOUQUET H.O. No. 8267 Water Soluble	@ $2.00 per lb.
OIL BOUQUET APPLE BLOSSOM No. 8240	@ 2.25 per lb.
IMITATION ALMOND BOUQUET No. 8262 Water Soluble	@ 2.00 per lb.
OIL CLOVER No. 888	@ 4.75 per lb.

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Carl F. Stiefel Dies

Carl F. Stiefel, 94, retired president of Schering & Glatz, New York pharmaceutical manufacturers, and son of J. D. Stiefel, German soap maker, died at his home in South Orange, N. J., Nov. 8.

Hooker Advances Coleman

David M. Coleman was recently advanced to the sales development department of Hooker Electrochemical Co., Niagara Falls, N. Y. He will handle technical corerspondence for all Hooker chemicals. Mr. Coleman is a graduate chemist of Worcester Polytechnic Institute, and has been with Hooker since 1943.

Lueders Honors Veterans

A joint celebration in honor of its sixth and seventh jubilarians was held at the Hotel Astor, New York, recently by George Lueders & Co., New York. Harry W. Heister, director of the company and a salesman, and August Miller, a receiving clerk were guests of honor at the dinner-dance. Mr. Heister completed 50 years with the firm in October, and Mr. Miller reaches his half-century mark in January. The entire personnel of the company, including branch managers from San Francisco, Chicago and Montreal, as well as sales representatives from various cities, was on hand for the affair. Both men received diamond pins and identical inscribed gold wrist watches and other gifts. A luncheon was also held at the Drug & Chemical Club, New York in Mr. Heister's honor on the day of his anniversary. This was attended by the Veteran's Organization, composed of employees who have been with the firm 25 years or more. A similar luncheon will be held in honor of Mr. Miller's 50th anniversary in January.

Fritzsche Remodels in Chi.

Completion of the remodeling and redecorating of its Chicago headquarters building at 118 W. Ohio St. was announced recently by Fritzsche Brothers, Inc., New York. Both the exterior and interior of the building, which the firm has occupied since 1924, have been refurbished. M. J. (Pete) Niles is manager.

Alrose Personnel Changes

The appointment of Dr. Arthur Dolnick, formerly of E. F. Drew & Co., Boonton, N. J., as research director of Alrose Chemical Co., Providence, R. I., was announced recently. Other changes at Alrose involve Robert Feigin, formerly of Socony-Vacuum Greenpoint (N. Y.) Laboratories, who is now in charge of application research. Mitchell Chalek, formerly of Drew, has joined the Alrose research and development staff. Dr. Harry Kroll, formerly in charge of organic research at Alrose has left to accept a National Cancer Research Fellowship.

Synthetics Wash Potatoes

Maine agricultural experiment station investigators have approved the use of synthetic detergents for washing super quality potatoes which are being prepared for market. In tests at Orono, Me., plain water was used on a part of the lot and two types of synthetic detergents on other portions. It was concluded, says a brief statement in the Maine station's annual report for 1948, that "washing for one minute with a detergent was as good or better than washing in plain water for five minutes. The choice of detergent would depend on cost and low foaming characteristics."

Houghton Changes in Sales

Changes in the eastern sales division of E. F. Houghton & Co., Philadelphia, were announced recently. One change involves the division itself, which has been split into two sections: eastern sales north, which includes New England and New York state, and eastern sales south, including Pennsylvania, New Jersey and Delaware. Orum R. Kerst heads the north section and J. R. Clendenning the south.

In addition, it was announced that A. C. Smith, former assistant to the eastern sales manager, has been advanced to the newly created post of sales coordinator for the two new eastern sections.

Coughlin PMMI President

Wallace E. Coughlin of Pneumatic Scale Corp., North Quincy, Mass., was elected president of the Packaging Machinery Manufacturers' Institute at its 17th annual meeting at the Edgewater Beach Hotel, Chicago, Oct. 31-Nov. 2. He succeeds H. Kirke Becker, Peters Machinery Co., Chicago. New vice-presidents chosen at the meeting were Boyd H. Redner of Battle Creek (Michigan) Bread Wrapping Machine Co. and Wilhelm B. Bronander, Scandia Manufacturing Co., North Arlington, N. J. Four new directors elected, including Mr. Redner, were: Palmer J. Lathrop, Cameron Machine Co., Brooklyn; Harry A. Miller, Burt Machine Co., Baltimore, and G. Radcliffe Stevens, Elgin (Ill.) Manufacturing Co.

Nearly 100 executives of packaging machinery companies attended the three day meeting of the institute, which included two full day business sessions and various social functions. At a panel discussion on the "Long Range Outlook for the Packaging Machinery Industry," one of the speakers was Roger L. Putnam, president of Package Machinery Co., Chicago. Dates announced at the meeting for 1950 include the semi-annual meeting to be held April 24th at the Sheraton Hotel, Chicago, which is to be the headquarters hotel of the institute during the American Management Association's Packaging Exposition Week. The 18th annual meeting of the institute will be held at the Homestead, Hot Springs, Va., Sept. 23-26.

Third West. Package Show

The third Western Packaging Exposition and Conference will be held during the week of August 14, 1950, in the San Francisco Civic Auditorium, according to a recent announcement of Clapp & Poliak, exposition managers.

AMA Elects Elrick

Robert F. Elrick, director of marketing research for the Pepsodent Division of Lever Brothers Co., Cambridge, was recently elected to the vice-presidency of the American Marketing Association.

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NOW YOU CAN UP *Quality* WITHOUT INCREASING *Costs*

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Superior performance...prices at pre-war levels

Selling in today's competitive markets requires products with superior performance. When performance is measured in terms of quality *and* dollars—the role of each basic ingredient must be considered. Take STEARIC ACID for example—

With the PRICE of all Emersol Stearic Acids at pre-war levels, and with QUALITY now better than ever, you gain better performance and—even more important—increased satisfaction from your own customers.

CHECK THESE QUALITY ADVANTAGES

IODINE VALUE—Emersol 132 Lily Stearic Acid has the lowest Iodine Value (1.0 max.) among commercial stearic acids. It is recommended where highest purity is essential.

COLOR—COLOR STABILITY—All Emersol Stearic Acids possess superior initial colors, grade for grade—and exhibit a resistance to color change upon heating, uncommon among all stearic acids. This stability confers a like stability upon products made from Emersol Stearics.

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COMPOSITION—Emersol processing provides a range of compositions. Emery's solid acids are available in all standard grades (single, double and triple-pressed types). Titers range from 127-131°F for Emersol 140 Palmitic Acid to 147-149° F for Emersol 150 Stearic Acid*.

BETTER PRODUCTS, LOWER PRICES—We urge you to make comparisons of an Emersol Stearic Acid with any product you now are using. Compare its performance in terms of quality and dollars.

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Swift Oil Div. Moves

Transfer from Chicago to Hammond, Ind., of the administrative offices of the industrial oil division of Swift & Co., Chicago, was announced recently by F. E. Lacey, manager. The move is expected to be completed around Jan. 1, 1950. Involved in the shift are executive personnel, raw material buying, sales representatives and clerical staff. At present, administrative offices for the division are in the Chicago general office of Swift. The company recently built a modern, integrated fractionation and decolorizing plant at Hammond as part of a proposed technical products group. Administrative offices are provided for in the plant. The new office address will be Swift & Co., Technical Products Plant, 165th St. and Indianapolis Blvd., Hammond, Ind.

New "No-Rinse Surf"

"No-Rinse Surf," a new detergent that is said to eliminate the need for rinsing clothes after they have been washed, was announced recently by Lever Brothers Co., Cambridge, Mass. The new product is described as a general household cleaning agent that can be used in many kinds of cleaning. Clothes washed in this detergent require no rinsing, but may be hung out to dry after they have been wrung out of the original wash water. Original announcement of the new product was made at the Barclay Hotel, Philadelphia, recently by Charles Black, director of Lever Brothers' Washability Laboratories. Following its immediate introduction in the Philadelphia area, including Camden, N. J., Chester, Pa., Wilmington, Del., and Reading, Pa., the product will be made available in the Chicago and Los Angeles areas later this year. Thereafter distribution will be extended to the entire U. S. as rapidly as production facilities will permit.

The principle of operation of "No-Rinse Surf" is that dirt removed from clothes is held in constant suspension in the wash water. Dirt, therefore, is said to flow out with the water when clothes are wrung. The new detergent has been under study in Lever laboratories for the past five years, according to officials of the company. United States Testing Company of Hoboken, N. J., has tested the new detergent and a representative of that firm presented some of the tests at the original introduction in Philadelphia. According to tests conducted by U. S. Testing Co., clothes washed with "No-Rinse Surf" and not rinsed remained as white or were whiter than clothes washed with soap or other detergents and rinsed twice. Equally good results were said to have been obtained in color tests, and longer clothing life through less handling is also claimed for the new detergent.

Believed to be the oldest cake of soap in existence this bar of "Unexcelled" soap was part of the first batch turned out by Curtis Davis & Co., Cambridge, Mass., in 1835. The company was taken over in 1897 by Lever Brothers. Richard A. Mellen of St. Albans, New York, is the possessor of the soap which was handed down through four generations to him.

Cos. Chemists Meet Dec. 9

A symposium on ammoniated dentifrices will highlight the semi-annual meeting of the Society of Cosmetic Chemists to be held at the Savoy-Plaza Hotel, New York, December 8th. Papers to be included in the program are as follows:

Morning session: "Hydrophilic Beeswax Derivatives" by P. J. Carter and W. C. Griffin, of the Atlas Powder Co., Wilmington, Del.; "Applications of Radioisotopes to Cosmetic Testing" by L. C. Baraill and J. Pescatore, of United States Testing, Hoboken, N. J.; "The Rationale of Odor Classification" by E. C. Crocker, of Arthur D. Little Co., Cambridge, Mass.; and "On the Inherent Invalidity of All Current Systems of Odor Classification" by Edward Sagarin of Givaudan-Delawanna, Inc., New York.

Afternoon session: "Cold Wave Lotions: Their Cutaneous and Systemic Effect" by H. T. Behrman of the New York College of Medicine; "Sorbitol in Cosmetics" by W. C. Griffin, R. W. Behrens and S. T. Cross of the Atlas Powder Co., Wilmington, Del., and "Ammoniated Dentifrices" by R. G. Kesel, Univ. of Illinois, C. J. Henschel, Eastern Graduate Research Found. and T. J. Hill, chairman of the Council on Dental Therapeutics of the American Dental Association.

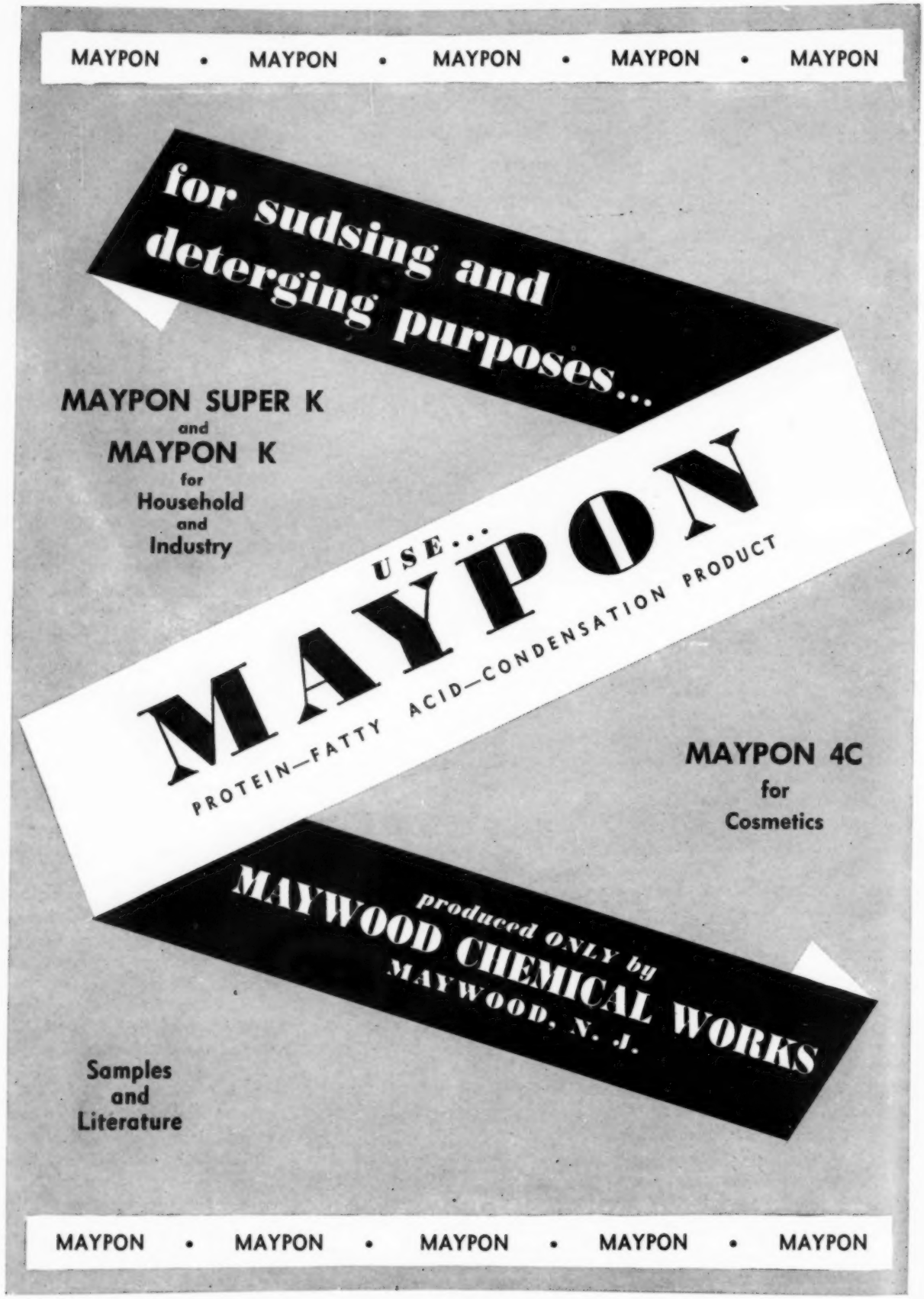
Safety in Chemicals Up

John J. Hoffman of Monsanto Chemical Co., St. Louis, was elected general chairman of the National Safety Council's chemical section at the annual Safety Congress in Chicago, Oct. 24. R. H. Albisser of Merck & Co., Rahway, N. J., was chosen vice-chairman and John R. Bollman, general safety engineer of Procter & Gamble Co., Ivorydale, O., was renamed secretary of the section. A total of 413 chemical concerns participated in the chemical section's accident reduction contest, M. A. Snell, insurance man, serving as chairman of the contest committee, reported. A total of 152 awards were made, of which 102 were for perfect no accident records made during the contest period. The chemical injury frequency rate, meaning the number of reportable accidents occurring for each million man-hours, was 5.01, a reduction of 12 per cent from the rate of 5.68 for plants participating in the previous year's contest. For just those plants which participated both last year and this, a reduction of 13 per cent was achieved in the frequency rate.

A total of 92 trophies were presented in this year's contest to units of the Dupont company alone. Six trophies were captured by various plants of Lever Brothers Co., and the Procter & Gamble awards numbered thirteen.

Awards also went to Monsanto

(*Turn to Page* 151)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C-P-P Earnings Are Up

Increases in its earnings for the third quarter and the first nine months of 1949 over those of the two periods a year ago were reported recently by Colgate-Palmolive-Peet Co., Jersey City, N. J. Net earnings for the first nine months of 1949 amounted to $8,910,506, equal to $4.29 a share, as contrasted with $7,122,428, or $3.40 per share for the same period a year ago. In the third quarter of this year a net profit of $3,612,042, equal to $1.75 a common share, as compared with $3,143,856, or $1.52 a share last year, was reported by the company. Domestic net sales for the year to Sept. 30, were given as $161,186,745, as compared with $171,069,831 in 1948. The amount transferred to earned surplus in the nine months of 1949, including a reduction of $900,000 in the reserve for inventory price decline, amounted to $9,810,506. Last year the amount was $8,372,428. Income from foreign subsidiaries in 1949 was $1,029,342, a gain over last year's figure of $925,000. Income taxes amounted to $4,945,451 for this year to Sept. 30, as against $3,853,706 a year ago. The company's total assets, as of Sept. 30, 1949 were $111,342,473, as compared with $106,824,563 on the same date last year. The cash position of the company at the end of the nine months for 1949 was $17,814,732, as against $14,106,850 in 1948.

Former Lever Man Dies

Freeman Jesse Young, an account executive with Kenyon & Eckhardt, Inc., New York, and one-time employe of Lever Brothers Co., Cambridge, Mass., died recently after a brief illness in United Hospital, Port Chester, N. Y. He was 43.

Crosby Elects Price

The election of R. E. Price, chief chemist, as vice-president of Crosby Chemicals, Inc., DeRidder, La., and the acquisition by the firm of 38,424 acres of land in Louisiana were announced recently by Crosby. Mr. Price has been with the firm since 1937 as a research chemist and developed the process of making pale wood rosin. With the purchase of the additional acreage, the company's holdings of fee simple lands in Louisiana now total 147,147 acres.

Plastic Bottle Agents

Four sales agents were recently named by Plax Corp., Hartford, Conn., to handle distribution of "Plaxpak" squeezable, unbreakable, polyethylene bottles. The four firms named are J. Rabinowitz & Sons, Inc., Brooklyn, covering metropolitan New York; Zuckerman-Honickman, Inc., Philadelphia; Continental Glass Co., Chicago; and S. H. Ansel & Sons, South Boston, Mass.

Woulfe on Chi. Fair Comm.

Henry Woulfe, president of the Pepsodent div. of Lever Bros. Co., has been named a member of the Chicago Permanent Fair Commission, which is at work on a plan for a series of annual expositions at a lake front site in that city, similar to the popular Chicago Railroad Fair, which has been closed permanently after a two-summer run.

Huston Lukens President

Robert W. Wolcott, president since 1925 of Lukens Steel Co., Coatesville, Pa., was named chairman of the board and Charles Lukens Huston, Jr., vice-president and executive asistant to the president since February, 1948, was elected president of the company by action of the board of directors at its meeting recently. The company recently began its 140th year in the business of iron and steel making and fabricating. Mr. Wolcott, an alumnus of Lehigh University, has been associated with Lukens since 1922, serving first as manager of its warehouse and fabricating division in New Orleans. The new president is a lineal descendant of Isaac Pennock, who founded the business in 1810. He has been with the firm since 1939, prior to which he had been with Armco Steel Corp., Middletown, O., for 10 years. He was elected vice-president of Lukens in 1948.

Stoner Forms Own Firm

Harold Stoner, formerly associated with the Procter & Gamble Co., Cincinnati, in the cost, buying and sales departments, and associates, has formed a new corporation, Williams Cutlery, Inc., to manufacture and sell stainless steel, hollow-ground cutlery. General offices will be in Dayton, Ohio.

Stoner, who joined P&G in 1929, was vice president in charge of sales of the Hewitt Soap Co., Inc., Dayton, a P&G subsidiary, from 1938 to 1947. For the past year and a half, he was on special assignment in the general buying department of P&G, from which position he resigned May 1.

Expands Detergent Testing

An expansion in the size of its personnel and facilities for testing soaps, synthetic detergents and other surface active agents was announced recently by United States Testing Co., Hoboken, N. J. Because of the rapid growth in the production and sales and number of producers of synthetic detergents and because most users of these materials do not have small-scale testing equipment for evaluating products, which are very specific in their application, the company has expanded the staff and added to the equipment of its detergent laboratory.

Perfumers Hear Dr. Jacobs

The November meeting of the American Society of Perfumers was held at the Advertising Club, New York, Nov. 16. A paper on flavors for beverages and candies was presented by Dr. Morris B. Jacobs, professor of chemistry at Brooklyn Polytechnic Institute.

AIC Medal to Murphy

The winning of its 1950 gold medal by Dr. Walter J. Murphy, editor of *Chemical & Engineering News*, Washington, D. C., was announced recently by the American Institute of Chemists. The medal, which will be presented to Dr. Murphy at the institute's meeting in New York in May, was awarded because of his contributions to the advancement of the chemical profession.

SEASON'S GREETINGS

To our many friends we extend best wishes for Christmas and the New Year

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NEW TRADE MARKS

THE following trade-marks were published in the November issues of the *Official Gazette* of the United States Patent office in compliance with Section 6 of the Act of February 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, fee of ten dollars must accompany each notice of opposition.

Brex—This for sudsing detergent product for laundry and general cleaning use. Filed July 5, 1947 by Procter & Gamble Co., Cincinnati. Claims use since May, 1943.

Gloss-O-Matic — This for all-purpose liquid cleaner. Filed Sept. 24, 1948 by Haley and Raskob Enterprises, Inc., Richmond, Calif. Claims use since July 14, 1948.

Rid-All—This for insecticides and preparations for pest control. Filed Jan. 15, 1947 by Rid-All Laboratories, Chicago. Claims use since Oct., 1944.

Checkerboard package design for Insecticides. Filed Mar. 22, 1948 by Ralston Purina Co., St. Louis. Claims use since May 1, 1931.

Sayman—This for tooth paste and insect spray. Filed May 27, 1948 by Sayman Products Co., St. Louis. Claims use since Jan. 1, 1880.

Annis Manor—This for shampoos. Filed June 3, 1948 by Cage Co., Waxahachie, Tex. Claims use since May 1, 1948.

Pyfos—This for miticide and insecticide. Filed July 2, 1948 by Woolfolk Chemical Works, Ltd., Fort Valley, Ga. Claims use since March, 1948.

Cremotres-A — This for antibacterial suspension. Filed Sept. 14, 1948 by Sharp & Dohme, Inc., Philadelphia. Claims use since Aug. 30, 1948.

A. Armstrong Cork Co.—This for seam and crack filling composition. Filed June 27, 1947 by Armstrong Cork Co., Lancaster, Pa. Claims use since Dec. 1, 1938.

VT—This for soap dispensers. Filed Nov. 30, 1948 by Voorhis-Tiebout Co., Red Hook, N. Y. Claims use since Aug. 30, 1948.

Spray-Foamatic — This for spray guns discharging fluid under pressure for use in washing automotive vehicles. Filed Feb. 6, 1948 by Moto-Sway Corp. of America, South Pasadena, Calif. Claims use since June 27, 1947.

Clor-O-Fen—This for disinfectants. Filed Nov. 4, 1948 by Rochester Germicide Co., Rochester, N. Y. Claims use since June 1, 1938.

Naclo—This for bleach solution with disinfectant properties. Filed Oct. 1, 1948 by Joseph Charles & Co., Bayonne, N. J. Claims use since Aug. 1, 1947.

Kemtex—This for cleaner for wallpaper and painted walls. Filed Oct. 29, 1947 by Omar Products Co., Columbia, O. Claims use since Oct. 21, 1947.

Luron—This for powdered hand cleanser. Filed Jan. 19, 1948 by Pacific Coast Borax Co., Los Angeles. Claims use since Oct. 29, 1947.

Disho—This for soap. Filed Feb. 9, 1948 b M. Werk Co., St. Bernard, O. Claims use since Oct. 7, 1937.

Sayman—This for toilet soaps, shampoos, shaving cream, etc. Filed May 27, 1948 by Sayman Products Co., St. Louis. Claims use since Jan. 1, 1893.

Glonap—This for synthetic type of washing agent used for dishes, walls, floors and clothes. Filed July 24, 1948 by E. F. Drew & Co., New York. Claims use since July, 1936.

Fab—This for laundry and household sudsing cleaner and detergent. Filed Oct. 14, 1948 by Colgate-Palmolive-Peet Co., Jersey City, N. J. Claims use since Jan. 29, 1920.

Ven—This for cleaning solution to remove ink, carbon and grease from the hands. Filed Oct. 18, 1948 by Pine-O-Pine Co. of Houston. Texas. Claims use since Aug. 1, 1948.

Oil-Glow—This for shoe polish. Filed Oct. 27, 1948 by Barton Manufacturing Co., St. Louis. Claims use since June 4, 1912.

Gilron — This for industrial metal cleaner. Filed Nov. 12, 1948 by Gilron Products Co., Cleveland. Claims use since Oct. 19, 1937.

Gilronco—This for industrial metal cleaner. Filed Nov. 12, 1948 by Gilron Products Co., Cleveland. Claims use since Oct. 19, 1937.

Helene Curtis—This for shampoos of various types. Filed July 8, 1947 by Helene Curtis Industries, Inc., Chicago. Claims use since June 1, 1928.

Pittcide—This for compositions containing chlorine used as a disinfectant. Filed Sept. 26, 1947 by Pittsburgh Plate Glass Co., Pittsburgh, Pa. Claims use since June 12, 1947.

Chevron—This for insecticides. Filed Dec. 20, 1947 by Standard Oil Co., of California, San Francisco. Claims use since Feb. 26, 1942.

Lengyel—This for shampoos. Filed Jan. 22, 1948 by Maurella Products Co., New York. Claims use since May, 1924.

Merle Norman—This for shampoo. Filed Feb. 9, 1948 by Merle Norman Cosmetics, Inc., Santa Monica, Calif. Claims use since July 27, 1928.

Gy-Tol—This for insecticides. Filed Apr. 9, 1948 by Geigy Co., New York. Claims use since Mar. 19, 1948.

Di-Spor—This for fungicidal ointment. Filed June 2, 1948 by Wintersmith Chemical Co., Louisville, Ky. Claims use since Jan. 27, 1948.

Hi-lo—This for disinfectant and deodorizing preparation. Filed June 25, 1948 by Eureka Chemical Co., Los Angeles. Claims use since Mar. 1, 1948.

Sergeant's—This for household disinfectant. Filed July 1, 1948 by Polk Miller-Products Corp., Richmond, Va. Claims use since 1885.

Flight—This for insecticides. Filed July 6, 1947 by Carolina Chemicals, Inc., Leesville, S. C. Claims use since Feb. 28, 1948.

Duon—This for shampoos. Filed July 31, 1948 by Duon, Inc., Coral Gables, Fla. Claims use since 1944.

Licresolis—This for liquid disinfectant. Filed Aug. 23, 1948 by West Disinfecting Co., Long Island City, N. Y. Claims use since Oct., 1915.

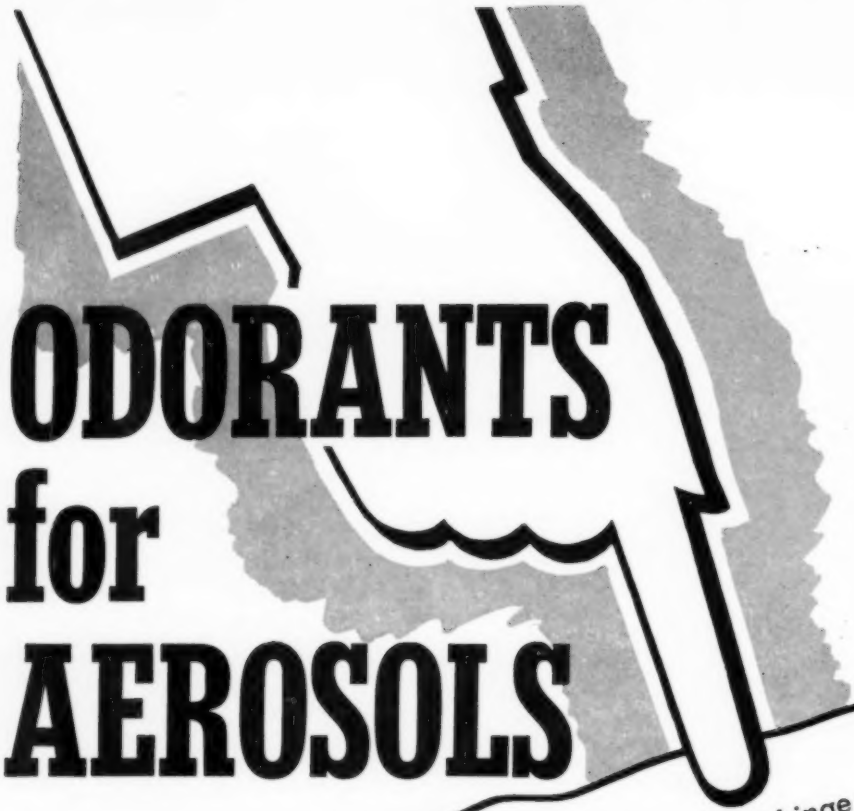
Tetrosan — This for wetting agent and germicide. Filed Sept. 20, 1948 by Onyx Oil & Chemical Co., Jersey City, N. J. Claims use since July 5, 1944.

Laundrasol—This for germicide for general laundry use. Filed Sept. 25, 1948 by Mark Laboratories, Pittsburgh, Pa. Claims use since Jan. 5, 1948.

Myrj—This for wetting agents. Filed Nov. 12, 1948 by Atlas Powder Co., Wilmington, Del. Claims use since Oct. 5, 1948.

Grubex—This for liquid spray or dip concentrate for controlling lice, mites and ticks. Filed Dec. 20, 1948 by Florida Chemical Industries, Inc., Ocala, Fla. Claims use since Oct. 11, 1948.

ODORANTS for AEROSOLS



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The success of your aerosol product may well hinge upon the appeal of its fragrance. Our present selection of odorants for aerosols provides a wide choice of economical yet highly effective and pleasant fragrances. All have been devloped especially for such use, with particular consideration for their compatibility with the propellants, chemical deodorants and other active ingredients employed in insecticide sprays, room fresheners and various other products now adapted to the popular aerosol method of dispensing. Requiring no more than 1/10 of 1% for complete, effective odorization, these powerful FRITZSCHE AEROSOL AROMATICS represent an economical short cut to the solution of your aerosol fragrance problem. Write us for prices, samples or other details.

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FACTORY: *Clifton, N. J.*

Tiny Deb—This for shampoo. Filed August 20, 1946, by Weldon, Inc., West Haven. Conn. Claims use since January, 1946.

Van Dyk Cosmetic Booklet

"A Guidepost to Applications of Cosmetic Raw Materials" is the title of a booklet recently published by Van Dyk & Co., Belleville, N. J. The booklet describes a number of cosmetic raw materials and contains suggestions for their application. It is intended primarily for formulators. Copies are available from the company.

New Koppers Products

The chemical division of Koppers Co., Pittsburgh, recently issued a technical Bulletin C-9-53, describing the properties and uses of meta-benzenedisulfonic acid (MBDSA), an intermediate compound, which is being produced in pilot plant quantities. The chemical division of the company also has issued a new technical bulletin C-9-127, describing the uses, chemistry, and properties of catechol. The pharmacology and toxicology of the compound and available information on its uses and its chemical reactions are described.

New D&O Price List

A descriptive price list of essential oils, aromatic chemicals, and perfume bases for the soap, drug and perfumery industries currently is being distributed by Dodge & Olcott, Inc., New York.

M'f'gs Monochromator

A monochromator, which covers the ultraviolet, visible, and infrared regions of the spectrum (.18 microns to 40 microns) when suitable prisms or gratings are used, currently is in production at the plant of the Perkin-Eimer Corp., Glenbrook, Conn.

Issues Perfume Catalog

Polak & Schwarz, New York, late last month published a catalog of perfume bases, bouquets, flower oils and soap and industrial perfumes. The catalog contains a brief description of each item and the price at which it is being offered. It is titled "Specialties for Perfumery."

Three Vice-Presidents Out As Lever Moves to New York

LEVER BROTHERS CO. moved its main offices to New York on December 1 as scheduled. Out of 862 persons employed formerly at the Cambridge, Mass. general and executive offices, reports indicate that only about one hundred have been moved to New York. The Lever Building on Memorial Drive, Cambridge, was vacated Nov. 30 to be taken over by its purchaser, a New England insurance company. Temporary New York executive offices at 505 Park Ave. began operations Dec. 5, as was the case with the general offices at 80 Varick St., New York. These offices are expected to be occupied until the fall of 1951 when the new 20-story Lever House on the west side of Park Avenue between 53rd and 54th Streets is completed. Lever, as well as Pepsodent, Jelke, and Harriet Hubbard Ayer subsidiaries will be housed in the new building when completed.

Wholesale severances of key Lever executive personnel associated with the move of the company headquarters to New York have brought much speculation in and about the soap industry. Three vice-presidents are reported to have been dropped including R. F. Elder, vice-president in charge of market planning; A. P. McIntyre, vice-president in charge of finance; and Alexander Stewart, vice-president in charge of production. Many others are also out in the shift including F. G. McNamara, purchasing agent, and Fred Penne, eastern regional sales manager. A full list of others was not available at press time. Reports state that James Reeves, director of purchases for many years, continues in that position with Clyde Chrisman as purchasing agent.

For those dropped from the Lever Brothers' payroll in the move to New York, special severance pay arrangements have been made, according to a report from Cambridge. In addition to taking into consideration the age of released employees, for each year of service, those leaving the company employ will receive one week's salary. Length of employment for many of the dropped personnel has exceeded 20 years. A list of new appointments to replace key executives dropped in the shake-up is expected to be made public in the near future.

A company spokesman stated that while he could not confirm details of the reduction in the size of the staff coming to New York, the situation was still "fluid" late in November. He pointed out that the move represents an "integration of operation," whereby operating departments for the Lever, Ayer, Pepsodent and Jelke divisions will be compressed into one staff for the four units. While the Lever operation was to be established in New York on Dec. 1, relocation of the Ayer, Pepsodent and Jelke groups is not scheduled until Jan. 1 or later.

Company personnel have been notified that Lever is setting up a personnel office in Boston to help those people being released to find new positions. In addition the company has written to all major manufacturers in the immediate New England area advising of the availability of some of its personnel and recommending them as having being dropped "through no fault of their own."

Schneider in Bankruptcy

A meeting of creditors of M. Schneider & Sons, Brooklyn soap manufacturing concern, was held Nov. 28 in Brooklyn to consider a plan of payment by the company, which went into bankruptcy recently. The firm is a partnership with Morris J. and David Schneider as copartners. Liabilities shown on the petition were $71,914.90 and unappraised assets totaled $33,194.31. The time fixed for filing of application to confirm the arrangement has been set as Dec. 12, 1949, at 10:30 a. m., at the office of Louis J. Castellano, referee in bankruptcy, Post Office Building, room 701, Washington and Johnson Streets, Brooklyn.

All wrapped up in one package

Since Kreelon* was introduced, Wyandotte engineers have been alert to ways of further developing this versatile detergent so as to have it meet industry's needs *exactly*. The result is today's Kreelon — an inexpensive synthetic detergent which is practically a *must* in modern cleaning compounds.

Kreelon is made under the most rigid manufacturing specifications and has 40-42% active organic content.

For information about properties and uses of Wyandotte Kreelon, write for the free booklet, "Kreelon."

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CARBOSE (Sodium CMC) • ETHYLENE DICHLORIDE
PROPYLENE DICHLORIDE
AROMATIC SULFONIC ACID DERIVATIVES
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RAW MATERIAL MARKETS

As of Nov. 23, 1949

FRACTIONAL changes in prices on a few fats and oils were recorded during the past month. One exception, coconut oil, showed a gain of 2¼ cents over the early November quotation and is now reported at 15 cents a pound, crude basis on the Pacific Coast. Copra, which was selling for around $167.50 a ton on Nov. 3, is now up to $187.50. Meanwhile, tallow at 6½ cents a pound for the fancy grade is unchanged from the price of three weeks earlier. A year ago tallow was selling for 14 cents a pound. Lard recorded a small advance over the earlier November quotation. At 10 cents, it is up ¼ of a cent from the Nov. 3 price. Other oils whose prices remained the same or declined slightly are crude cottonseed oil, currently quoted at 9½ cents, as compared with 9¾ cents a pound, earlier in the month; Corn oil, down one-half cent from the earlier November price, is 9¾ cents; peanut oil is currently quoted at 10⅝ cents a pound, as against 10¾ cents a pound on about November 3. Soybean oil is unchanged at 9½ cents a pound.

Reflecting the softening of prices in the fats and oils markets were the recent announcements by Procter & Gamble Co., Cincinnati, and Lever Brothers Co., New York, of reductions in the price of their shortenings. Cuts of one and one-quarter cents a pound in the wholesale prices of "Crisco" and "Spry" were announced by the two producers Nov. 19. Procter & Gamble said the cut brought the price to its lowest level since October, 1946. These reductions follow declines in the price of cottonseed oil.

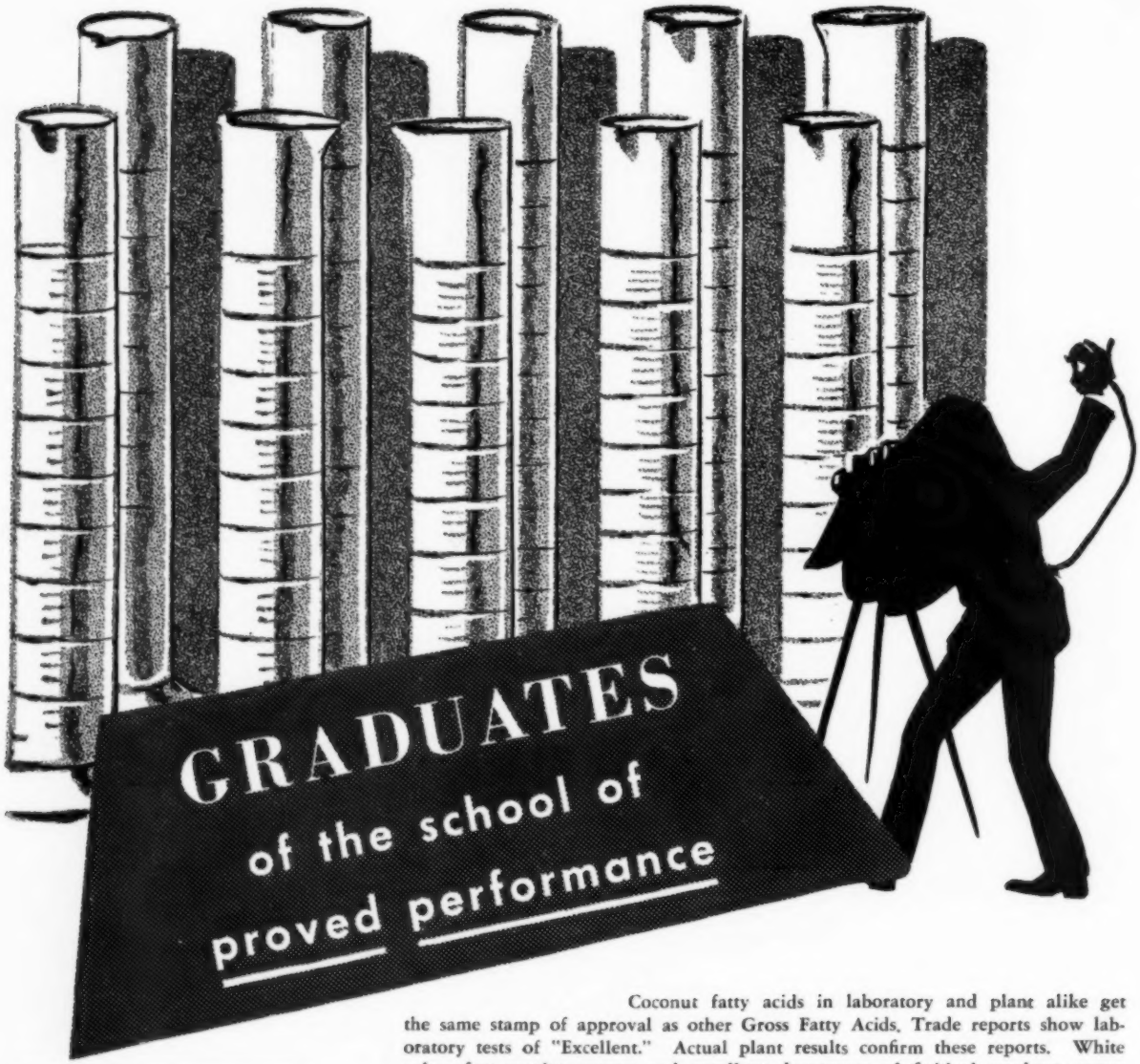
With tallow remaining at 6½ cents soap price reductions seem unlikely. However, on Nov. 7, 88 percent tallow chip soap prices were lowered about one cent. Single list price on 110 pound bags is now 11½ cents, as compared with 12½ cents previously. Car load prices are ⅝ths of a cent off.

Coconut oil shipments from the Philippines during the first nine months of 1949 totaled 46,160 tons, which was 10 percent greater than the total quantity exported in 1948. Copra exports from the Philippines during September amounted to 55,473 long tons, representing the third largest month of the current year. Figures released recently by the Office of Foreign Agricultural Relations of the U. S. Department of Agriculture showed that total shipments of copra from the Philippines for the year from January to September were slightly below the figures for the comparable period a year ago. In the first nine months of 1949 Philippine copra exports amounted to 401,629 tons, as against 479,289 tons for the January-September period a year ago. Of the coconut oil and copra exported by the Philippines during the first nine months of this year, nearly 64 percent of the copra and 80 percent of the coconut oil were shipped to the United States.

Reporting on copra exports from Indonesia during September, the Office of Foreign Agricultural Relations stated that 22,731 long tons were shipped, the smallest volume since May. Exports of coconut oil from Malaya in August amounted to 8,182 tons, compared with 4,332 tons in the previous month.

The fat and oil outlook grows more perplexing. It is complicated by both domestic and international factors. While prices of fats and oils are relatively low, particularly the animal fats, instead of relief being in sight, the situation seems headed for further deterioration with big production of fats indicated for next year. Domestic production of all types of fats and oils is still at an extremely high level and consumption, while still high, is tending downward. All of which means exportable surplus. The rest of the world is still said to be shy on fats and oils, with per-capita consumption down and production totals just beginning to approach pre-war. From this it might be assumed that world demand would tend to stabilize or increase prices in the U. S. However, because of the world dollar shortage other countries are unwilling to deal with the U. S. because of lack of convertibility of their currencies. Although European countries participating in the Marshall Plan are expected to take as much fats and oils in the coming year as they did in the previous year, estimates of the total are beginning to be revised downward. After ECA aid stops, no one knows what foreign demand on our fats and oils will be. Since exports have an effect on surplus commodities' prices,—a condition that did not obtain when we were a net importing nation,—concern is beginning to be felt by fat and oil producers and their trade associations. This concern is beginning to take the form of pressure on legislative representatives to enact legislation designed to ease restrictions on exports of fats and oils. The Granger Import Equalization Bill, which failed to get a vote in the House Agriculture Committee after full-scale hearings last spring, is being urged as one possible approach to the problem by fat and oil producers.

Pricewise, the essential oils and aromatic chemicals markets stood firm. The prospect of higher prices for anethol, citral, citronellol, geraniol and ionones was forecast. Citronella oil production will be hurt by floods in Guatemala and Haiti. The situation in China continues obscure, with few materials coming through to the U. S.



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Smead & Small, Inc.
Cleveland 15, Ohio

Braun-Knecht-Heimann Company
San Francisco 19, California

Braun Corp.
Los Angeles 21, California

Charles Albert Smith, Ltd.
Toronto 3, Canada

Thompson Hayward Chemical Co.
Kansas City 8, Mo. (and Branches)

James O. Meyers & Sons
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BIDS AND AWARDS

F. B. S. Soap Awards

In a recent opening for miscellaneous supplies by the Federal Bureau of Supply, Washington, D. C., for an unspecified quantity of soap, awards on item 1655 went to Armour & Co., Chicago, Ill., 5.2 cents for New York, and to the Aid Soap Co., Rochester, N. Y., 6.5 cents for Denver; awards on item 1709 went to E. F. Drew & Co., New York, 39.47 cents for New York, and 53.85 cents for East Point, Ga., to the Dickson & Munro Sales Co., San Francisco, 65 cents, and to the Harley Soap Co., Philadelphia, 43 cents; Swift & Co., Chicago, 10.8 cents on item 1674-10; General Soap Co., Chicago, with a bid of 13.2 cents on item 1674-10 for Chicago; and on item 1709 43.25 cents for Chicago; Kamen Soap Co., New York with a bid of 5.34 cents on item 1655 for Cleveland; Peck's Prods. Co., St. Louis, 49 cents on item 1715 for Denver.

Supply Bur. Soap Awards

The following awards on an unspecified quantity of soap were announced in a recent opening for miscellaneous supplies by the Federal Bureau of Supply, Washington, D. C.: Gillam Soap Works, Fort Worth, Tex., with a bid of 7.3 cents for Fort Worth on item 51-2-1430; Kamen Soap Products Co., New York, with a bid of 6.47 cents on item 51-S-1430 for New York, Washington and Cleveland; item 1655 a bid of 4.54 cents for Cleveland; Newell-Gutradt Co., San Francisco with a bid of 10.9 cents on item 51-S-1885 for Seattle; Stahl Soap Corp., Glendale, N. Y., with a bid of 9.23 cents on item 51-S-1885 for New York and Washington and a bid of 11.87 cents on item 1920 for Cleveland.

Soap Paste Awards

The award on an unspecified quantity of soap paste, and soap in a recent opening for miscellaneous supplies by the Federal Bureau of Supply, Washington D. C. went to the Utility Co., New York, with its bid of 6.3 cents on item 51-P-250, and to the Kamen Soap Products, New York, with its bid of 6.34 cents on item 51-S-1430.

Shoe Polish Award

Boyer & Co., Philadelphia, received the award on an unspecified quantity of shoe polish with its bid of 5.1 cents on item 51-P-1160 New York, and 5.1 cents on item 1170 for New York, in a recent opening for miscellaneous supplies by the Bureau of Federal Supply, Washington, D. C. Economics Laboratory, St. Paul, Minn., received the award on an unspecified quantity of dishwashing compound with its bid of 8.931 cents on item 51-C-1576 in a recent opening for miscellaneous supplies by the Bureau of Federal Supply.

Sweeping Compound Award

The award on an unspecified quantity of sweeping compound in a recent opening for miscellaneous supplies by the Bureau of Federal Supply, Washington, D. C. went to the Sanitary Soap Co., Paterson, N. J. with its bid of 2.07 cents on item 51-C-1619-15.

Marine Deodorant Bids

In a recent opening for miscellaneous supplies by the Marine Corps. Supply Office, Washington, D. C. for an unspecified quantity of deodorant, the following bids were received: West Disinfecting Co., Long Island City, N. Y., 24 cents; Elkay Products Co., New York, 20.9 cents; Paradize Prods. Corp., Fairview, N. J., 21 cents; H. A. Curry Co., Cleveland, O., 21.8 cents; Goulard & Olena, Skillman, N. J., 29.25 cents; Marjo Prods. Co., Chicago, Ill., 23 cents; Clifton Chemical Co., New York, 30.0 cents; Dixie Janitor Supply Co., Washington, D. C., 21.4 cents; Uncle Sam Chemical Co., New York, 20.635 cents; Cole Laboratories, Inc., Long Island City, N. Y., 23.058 cents; Selig Co., Atlanta, Ga., 22 cents; Huntington Laboratories, Huntington, Ind., 29 cents; Reliable Chemical Co., Passaic, N. J., 19.5 cents; Puritan Chemical Co., Atlanta, Ga., 21.4 cents; Chess-White Co., Baltimore, Md., 19.7 cents; Wm. Messer Corp., New York, 22.2 cents.

AF Naphthalene Bids

The following bids were received on 20,000 pounds of naphthalene flake in a recent opening for miscellaneous supplies by the Air Force Corps., New York: Thompson-Hayward Chemical Co., Kansas City, Mo., 15.4 cents; Octagon Process, Brooklyn, 16.7 cents; Barrett Div. of Allied Chemical & Dye Corp., New York, 15.75 cents; Reilly Tar & Chemical Corp., Tuckahoe, N. Y., 15.7 cents; Wm. Messer Corp., New York, 14.08 cents; Standard Napthalene Prods. Co., S. Kearney, N. J., 14.2 cents; Koppers Co., New York, 12.815 cents; and City Chemical Corp., New York, 19.45 cents.

Navy Dispenser Bids

Bids on an unspecified quantity of wall type dispensers were received in a recent opening for miscellaneous supplies by the Navy Dept. Aviation Supply office, Philadelphia, Pa. from: J. E. Frankle, Philadelphia, with bids of $1.27 on item 1a, $1.25 on 1b, $3.48 on 2a, $3.31 on 2b, $3.32 on 2c and $3.39 on 2d; Hajoca Corp., Washington, D. C., placed bids of $1.26, on item 1a, $1.24 on 1b, $3.49 on 2a, $3.32 on 2b, $3.33 on 2c and $3.40 on 2d, total, $6,734.

P. O. Soap Powder Bids

The following bids were received in a recent opening for miscellaneous supplies by the Post Office Dept., Washington, D. C., on an unspecified quantity of soap powder: Chemical Mfg. & Distributing Co., Easton, Pa., 4.02 cents; Stevens Soap Corp., Brooklyn, 3.32 cents; and Kamen Soap Prods. Co., New York, 3.98 cents; the following bids were received on an unspecified quantity of hand grit soap: M. Schneider & Sons, Brooklyn, 11.0 cents; Pioneer Soap Co., San Francisco, 5.0 cents; Colgate-Palmolive-Peet Co., Jersey City, N. J., 3.224 cents and the Kamen Soap Prods. Co., New York, 2.21 cents.

Season's Greetings

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at home and abroad,
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bring you happiness and
prosperity.

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PRODUCTION SECTION

Soap—Synthetic Detergent Mixtures

MIXTURES of soaps and synthetic detergents would seem to be the direction in which lies the "ideal" cleaning compound. This is the consensus of two papers presented at the recent meeting of the American Oil Chemists' Society in Chicago. The manner in which soaps and synthetic detergents complement each other is an aid in overcoming inherent shortcomings of both compounds, according to these papers. In a paper, "Synthetic Detergents in the Soap Industry," prepared by Hector C. Borghetty and C. A. Bergman, of General Dyestuff Corp., New York, Mr. Borghetty describes the detergent market as being composed of three parts, based on the degree of water hardness. These are: 1) soft and medium hard water, where pure soap holds its original market; 2) extremely hard water, in which synthetics are favored, and 3) the intermediate area, which is open to both soap and synthetics. The ideal product, of course, would be a detergent suitable for all three markets, Mr. Borghetty said.

Combination soap-synthetic detergent cleaners to bring out the best features of both were discussed in a paper, "Mixtures of Soap and Synthetic Detergents," prepared by L. H. Flett, O. M. Morgan and L. F. Hoyt, of National Aniline Division, Allied Chemical & Dye Corp., New York. As an instance of how soaps and synthetics complement each other, Mr. Hoyt cited the use of a synthetic detergent in a soap product to increase the rate of solution and for speeding up and improving rinsing.

Built detergents, according to Mr. Borghetty, have become more popular for heavy duty cleaning since the introduction of carboxy methyl cellulose, optical bleaches and polyphosphate builders in synthetic detergent formulations. However, to clean well any detergent must be built quite heavily, thus making it less mild which perhaps may be objectionable to the user, he said. He further pointed out that soap acts as a water softener, forming insoluble soaps with the hardness producing elements and dispersing the precipitate. This action is effective if ample soap is used to counteract the hardness; however, on rinsing, with the addition of more hard water, the lime soaps reprecipitate and are redeposited on the fabric.

Synthetic detergents do not function as water softeners, according to Mr. Borghetty, but form soluble lime salts and thus may produce foam in water of all degrees of hardness. Several attempts to use synthetic detergents as dispersing agents for soap failed, because the colloidal conditions of the system retard the foaming characteristics of both the soap and the synthetic detergent. It would appear that a combination of soap and a polyphosphate, which functions as a water softener, might be better. However, this system does not work either where there is an excess of hardness, as in rinsing. The advantage of a polyphosphate in combination with soap is that it induces good initial cleaning and forms a clear soap solution in hard water. The value of a synthetic detergent with soap depends on its ability to disperse the lime soaps, and also on such factors as its solubilizing effect on soap and soil, its aid in emulsification and its stability to minerals in water.

It is important to define the action of lime soap dispersants. They do not soften water, but suspend and deflocculate the insoluble soaps, and produce a fine dispersion; thus, their action is not limited by the degree of water hardness. On the basis of the above considerations, investigations were conducted on ternary systems of: soap, a synthetic detergent and a complex phosphate. About 25 per cent tetra sodium pyrophosphate was used in all tests, varying the soap-synthetic ratio and the type of synthetic. A pure tallow soap was used with one of the following:

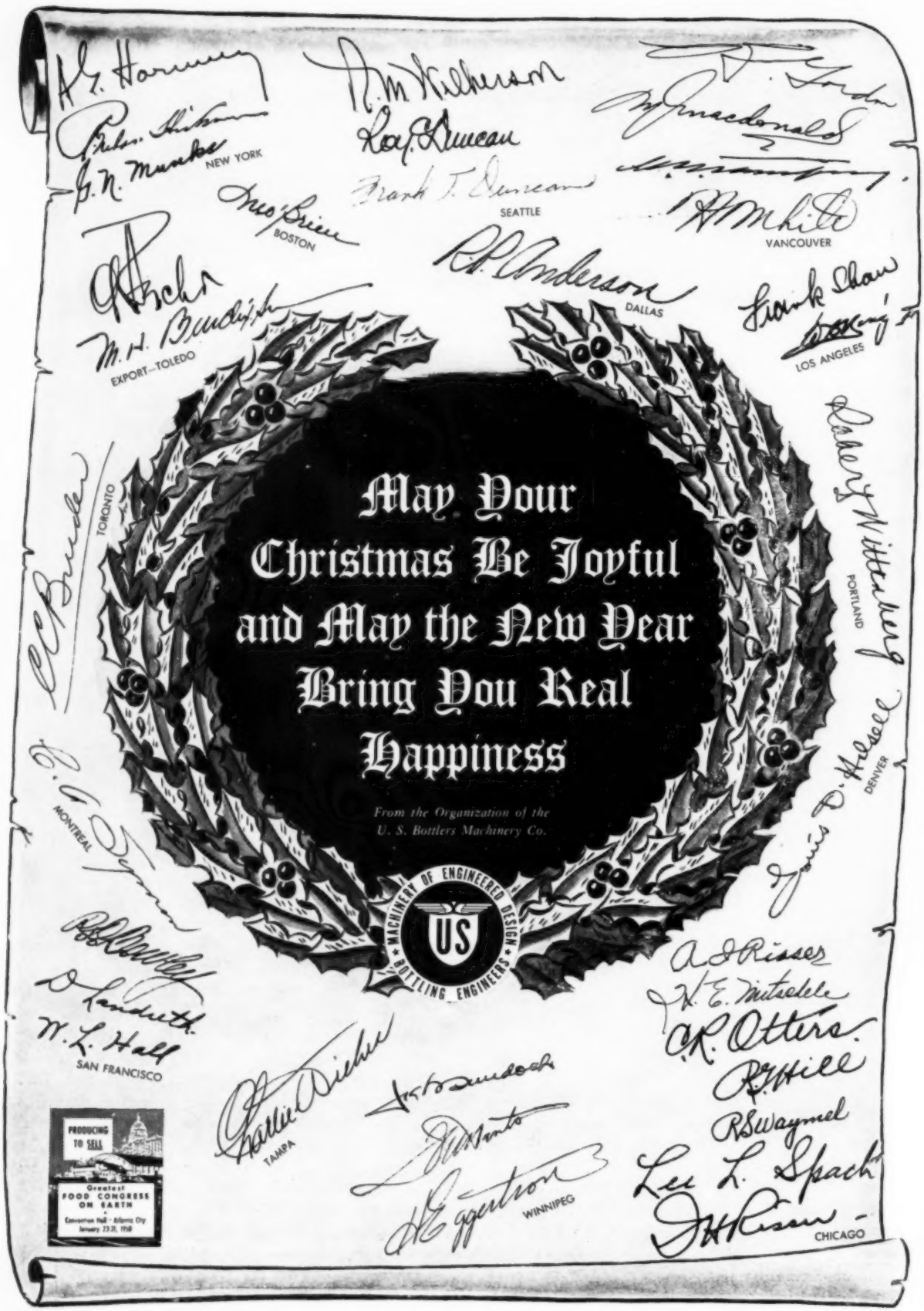
A. 32 per cent active sodium salt of oleyl methyl tauride;

B. 100 per cent active polyethylene oxide condensate;

C. 85 per cent active alkyl benzene sulfonate.

Detergency and foam results were observed on water of 125 ppm and 250 ppm hardness. Detergency was evaluated by test soil cloths run in a "Terg-O-tometer"; foam tests were evaluated by the Ross-Miles procedure. Ternary mixtures were of the following type: 25 per cent TSPP; 15 per cent synthetic detergent; 60 per cent soap. The soap acts as the major cleaning agent, the phosphate acts as a water softener, and controls the foam; the synthetic detergent functions as the lime soap dispersant.

Results of the detergency tests in 125 ppm water indicated an increase in detergency of the ternary mixtures over straight soap as fol-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lows: (A) 30-40 per cent, (B) 0-15 per cent, and (C) 20-40 per cent. In 250 ppm water, the soap efficiency fell off about 45 per cent, while that of the ternary mixtures remained about the same.

Foam tests on water of 125 ppm hardness showed the ternary compounds to have half the foam of straight soap; tests in water of 250 ppm hardness followed the same general pattern, but the foam of the straight soap was reduced greatly.

A DISCUSSION of complementary properties of soaps and synthetic detergents, as well as the commercial application of such mixtures were covered by L. F. Hoyt, of National Aniline. Soaps and synthetics complement one another in their properties in many cases, he stated. By proper blending advantage may be taken of the virtues of each. For example, soaps are generally slow to dissolve and difficult to remove upon rinsing, whereas synthetic detergents tend to go into solution rapidly. Addition of a synthetic detergent, such as "Nacconol NR" to soap, not only increases its rate of solution but markedly speeds and improves the rinsing. Similarly, the addition of such a synthetic to soap makes it possible to use the latter in either hot or cold water. Most straight soaps are somewhat indifferent detergents in cold water. Synthetics can be made into bars, but lack the slippery feeling to which the consumer is accustomed. On the other hand, the extreme slipperiness of soap, when used to wash floors, creates a real hazard. This hazard is difficult to remove by rinsing. Mixtures overcome the disadvantages of each of these detergents. Likewise, in the washing of fabrics, mixtures can be prepared which have the lubricating action of soap but wash and rinse with the speed of the synthetics. Such a combination has marked advantages where extreme mechanical action can be employed in the washing. Hard or acid waters cause soap to precipitate insoluble salts or fatty acids, giving rise to "rings around the tub," spots in dyeing, and streaks or "graying" in washing or scouring. This, again, can be corrected readily by admixture with a synthetic. Good lathering properties in all types of water can be had by the proper selection of the soap and synthetic for blending. Persistent effects in perfuming can also be had by incorporating a synthetic in deodorant toilet soaps.

MIXTURES of soap and synthetic detergents have been studied by the authors since the earliest introduction of synthetic detergents; however, it was not until the development of the "Nacconols" that satisfactory sudsing in hard water was obtained. Since then several successful soap-synthetic detergent combinations have been developed, as illustrated by the following:

Salt Water Soaps. Large quantities of "Nacconol"-soap bars were produced for the Navy during the postwar years to overcome the shortage in the supply of coconut oil. Here tallow soap served as a very desirable binder for the mixture. These salt water soaps are a great improvement over the older salt water soaps made from coconut oil.

Deodorant Soaps. "Nacconol NRSF" is a very effective compound in deodorant toilet soaps. The most successful products contain equal parts of this detergent and soap. Milled soaps can be prepared readily by incorporating five to ten per cent of starch (U. S. 2,438,169). A framed soap containing 40 per cent "Nacconol NRSF" can be produced using the following formula:

	Parts
Coconut fatty acids	362
"Nacconol NRSF"	400
Water	50
42° & caustic soda (37.7%)	188
	1.000

Stearic or tallow fatty acid may be substituted for the coconut fatty acid, but it is essential to keep the moisture content of the product between 20 and 22 per cent.

Hard Water Domestic Soap. Built soap powders containing 20 to 40 per cent "Nacconol NR" wash cottons as well as pure soap flakes. During a recent shortage of laundry soaps, for example, a large scale series of tests were made with bundles containing T-shirts and white dress-shirts. No difference could be detected in the

(*Turn to Page* 170)

New Armour Fatty Acid Plant

OPENING of a new fat and oil fractionation and distillation plant at McCook, Ill., Chicago suburb, was announced recently by Armour & Co., Chicago. The new plant is intended to process up to 100,000,000 pounds of fats and oils a year. Most of the fats and oils processed at the new plant, which stands on a 23-acre tract, will be those of animal origin, collected and rendered in Armour meat packing establishments throughout the U. S. However, vegetable and fish oils will also be used to obtain several of the fatty acids not found in animal fats.

The new plant has a large tank farm for raw material storage. It uses natural gas for heat and as a source of hydrogen. The new plant will also produce its own nitrogen. It has its own reservoir, using Lake Michigan water. Power is obtained from the local utility. The plant also has a fat-splitting tower for splitting the glycerine from the acids and washing it out to be recovered at the bottom. Acids are separated in a high vacuum fractional distillation section of the plant. Five forms of pure acids, amides, nitriles, amines and quaternaries, either pure or mixed, constitute the principal products of the McCook plant. There are 24 storage tanks of 11,000 gallon capacity for storage of fatty acids produced at the plant. Stainless steel tanks and piping are available to prevent corrosion in handling especially active amine acetates.

A solvent crystallization phase, where acids containing the same number of carbon atoms and having the same or very close boiling points can be separated from each other on the basis of their melting points, is to be carried on in a separate plant, not yet completed.

DRYMET*

THE ECONOMICAL DETERGENT SILICATE

Cowles DRYMET, anhydrous sodium metasilicate, is the most highly concentrated form of sodium metasilicate available. It is more economical to use, on the basis of both Na_2O (alkalinity) and SiO_2 (silicate) than any other type of hydrated or anhydrous detergent silicate, either compounded or by itself. DRYMET contains no water of crystallization.

DRYSEQ*

THE ALL-PURPOSE DETERGENT SILICATE

Cowles DRYSEQ, anhydrous sodium sesquisilicate, is a medium pH alkaline cleaner which will do fast, dependable work at a low cost to the user. It is a white, free-flowing powder, quickly and completely soluble in hot or cold water—containing 56.75% Na_2O—making it an economical base material for compounding.

DRYORTH*

THE HEAVY-DUTY DETERGENT SILICATE

Cowles DRYORTH, anhydrous sodium orthosilicate, is a powerful, speedy, heavy-duty cleaner with valuable penetrating and wetting-out properties, reinforced dirt-removing power and unusual emulsifying action. It is an anyhdrous, free-flowing powdered silicate containing not less than 60% Na_2O, which may also be used as an economical constituent of high pH cleaning compounds.

We'll be glad to send you our DRYMET File Folder containing complete technical information and suggested formulations.

CRYSTAMET*

THE MEDIUM pH DETERGENT SILICATE

Cowles CRYSTAMET is a pure, perfectly white, free-flowing granular pentahydrate sodium metasilicate with the normal 42% water of crystallization. Suggested for compounding when it is desirable to lower the concentration of a finished product. Readily soluble—chemically stable—easy to handle. Can be used on medium pH jobs.

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Purification of Glycerine

BEFORE glycerine can be recovered from soap lye, all excess alkali must be removed. To accomplish this, more fat is added and the boiling resumed in separate kettles until the relatively valuable lye has all been "spent." This makes more soap, exhausts nearly all of the excess lye in a useful way, and puts the solution in shape for glycerine recovery.

These spent lye solutions average around four to five per cent glycerine, but may exceed 10 per cent in a countercurrent washing operation of the soap. It is essential that the solution be rendered as free as possible from objectionable impurities. The caustic has been nearly all used up in the last boiling step, but the solution still contains a good deal of salt, some soap, a little sodium bicarbonate, some metallic impurities, and other compounds in small amount. As a first step to remove these, the solution is brought to near neutrality by treatment with sulfuric or hydrochloric acid. The chemical and physical treatments that then follow must be calculated to avoid excesses.

For instance, just enough of a metallic salt solution is added, to precipitate the soap and bicarbonates as inso'uble compounds without leaving any excess precipitant in solution. In many large plants an actual excess is added purposely, and later removed by treatment with caustic soda and subsequent filtration. This is the "double treatment" for impurity removal. In either case, after standing, these gelatinous precipitates are removed by filtration in filter presses. The solution is thus clarified as well as left nearly neutral, and is ready for the evaporation step in a vacuum evaporator.

In the Twitchell process, the fat hydrolysis is performed with the aid of a catalyst. Before glycerine recovery from the sweet water can be undertaken, suitable chemical treatment must be applied to remove as many impurities as possible, including the remaining catalyst. To remove these materials and make the final solution as nearly neutral as possible, lime or barium hydrate is added. The latter forms very insoluble barium sulfate, which helps to precipitate all the impurities. Enough barium and calcium are added to precipitate all the sulfuric acid, but in addition, insoluble barium and calcium soaps are formed from the fatty acids present. Excess precipitants must be removed, a step which constitutes another double treatment.

The product of countercurrent hydrolysis may contain 20-30 per cent of glycerine. It also requires some purification, followed by neutralization. All of these crude solutions are then ready for concentration in vacuum evaporators.

In many plants the soap lye solutions are treated with an excess of mineral acid in addition to the use of ferric or aluminum sulfate to precipitate impurities. Because the pH of the solution during acid treatment may be four to 4.5, or even as low as three, equipment corrosion is a problem at this stage. The fact that the mixtures are often agitated with air also tends to increase the corrosion rate when steel equipment is used. Monel and nickel or nickel-clad steel are used in some cases for both acid treating and caustic treating tanks, and for connecting piping and accessory equipment. Many corrosion tests have been made in a study of the problems of corrosion at the various stages of treatment. Different materials are needed to meet the many different conditions. *Inco Corrosion Reporter* 4, No. 4 (1949).

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Fat Hydrolysis

Data are presented on the reaction of tallow and coconut oil with water, in the temperature range used in continuous fat splitting. The maximum amount of splitting which can occur is determined by the glycerol concentration in the aqueous phase. This value is not affected by changes in temperature. In the range of 90 to 100 per cent completeness, the unsplit fat contains more glycerol than the original fat, an indication of the presence of a large amount of monoglyceride. The percentage of glycerol in the unsplit fat is constant, which is strong evidence that the reaction proceeds stepwise. The autoclave in which the work was done is suitable for general use. V. Mills and H. K. McClain, *Ind. Eng. Chem. 41*, 1982-5 (1949).

◆

X-ray Studies of Soaps

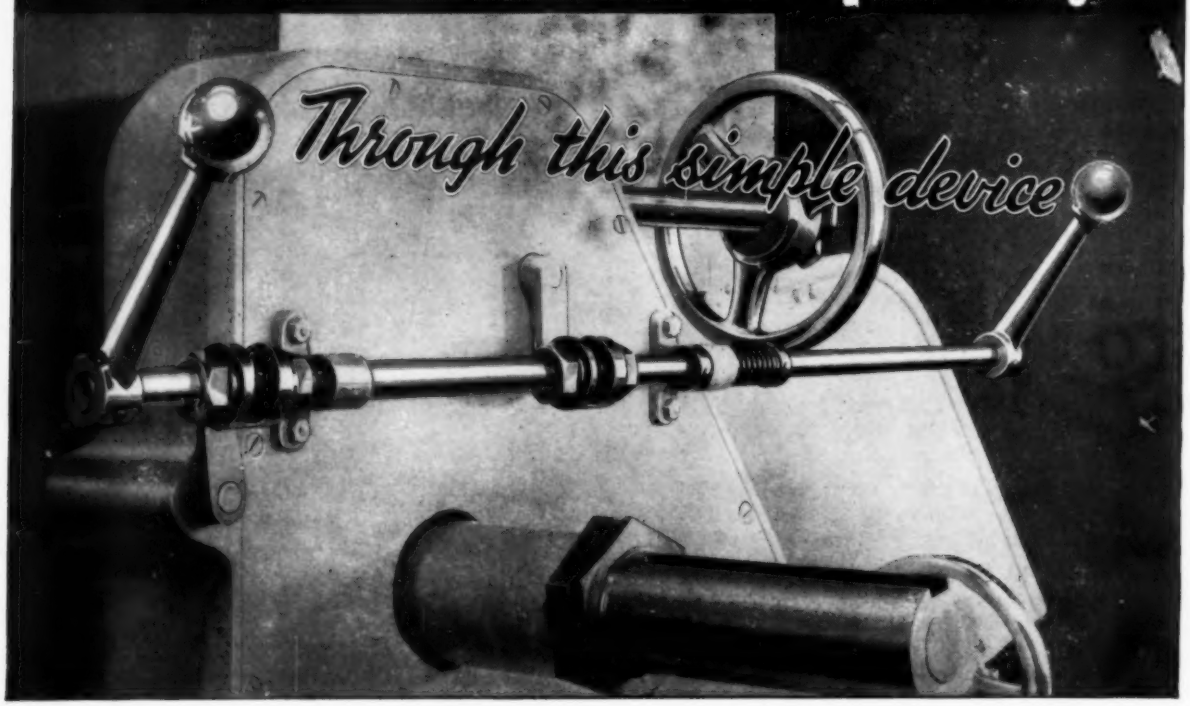
Moisture content and x-ray diffraction data obtained for 29 commercial soaps showed that the soaps had sharp diffraction patterns. This indicates that they were fully crystalline. It is possible to identify the type of fatty acid and the phase of the soap present, by comparing the x-ray patterns with those for pure soaps. Toilet and medicated soaps are hemi- or monohydrates. Values for the long and short spacings indicate that they are mainly beta-sodium palmitate and omega-sodium oleate. Coco soaps are dihydrates and are principally sodium laurate and myristate. Glycerine soaps contain 15-17 per cent moisture and are complex fatty acid-rosin compounds. Washing soaps contain 11-17 per cent moisture and have long and short spacing values which do not agree with any of those for pure sodium soaps. Shaving soaps in stick form are monohydrates and appear to consist chiefly of two or more phases of sodium palmitate. G. S. Hattiangdi, *J. Research Natl. Bur. Standards 42*, 331-41 (1949).

◆

Soap Gels in Solvents

The setting time, syneresis, and gel-strength of gels of sodium palmitate, sodium stearate, and sodium oleate were measured in 17 different solvents. For gels in any given solvent, the setting time and extent of syneresis decrease with different soaps in the following order; sodium oleate, sodium stearate, sodium palmitate. The gel-strength increases in the order, sodium o'eate, sodium stearate, sodium palmitate. For solvents belonging to a homologous series the setting time and extent of syneresis of soap gels increase, and the gel-strength decreases as the series is ascended. G. S. Hattiangdi and S. P. Adarkar, *J. Am. Oil Chemists' Soc. 26*, 364-6 (1949).

3 cwts MORE SOAP per day



One of many excellent features to be found on the Vickers-Armstrongs toilet soap mill, the inter-connected scraper mechanism saves both time and fatigue. It is fitted on all double hopper mills. Just a flick of the lever from front or rear of the machine and both scrapers are actuated simultaneously. Operation is simplified, wear and tear on the operators' hands is greatly reduced and considerable time is saved between millings. It is reliably estimated that this device increases production by 5%—equivalent to 3 cwts. per day on the large size mill.

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O.B.T. 62

PRODUCTION CLINIC

By E. G. THOMSSEN, Ph.D.

PROTECTIVE skin creams are still dispensed in wash rooms or given to factory employees at their work stations. Since the wash room is the usual place for their application, generally it is here that they are distributed. Wash rooms in industry and institutions are usually serviced by sanitary supply houses, which are the logical vendors of protective hand creams.

The consumption of cosmetics in such places as public powder and wash rooms, institutional and private club and shower rooms has suffered from the type of approach taken to encourage this market. Manufacturers of better grade toiletries assume an attitude of squeamishness toward the sale of their products in such places. It seems to us that if the sanitary chemicals industry devised a truly high level method of merchandising a quality line of toiletries for sale in public washrooms, etc., it would boost their sales volume. The products which have been tried out in these places generally have not been of good quality nor has their method of dispensing been effective.

During the recent war years considerable attention was given to occupational dermatitis. The U. S. Public Health Service gave its support to the prevention and treatment of skin ailments. At the same time it sought to encourage the natural beauty of the skin. Representatives of U. S. P. H. S. and other government agency speakers gave talks before trade associations interested in sanitary products. The use of hand and skin protective creams increased in use as a result of this publicity. Protective skin creams possess certain properties such as being easy to spread, being stable in the presence of many types of chemicals and having low surface tension, thus providing thin films. In addition, they are non-transferable to objects handled, being slightly absorbed by the skin. Besides these properties, they are non-hygroscopic and readily removable by soap or other detergents with a hand brush.

DR. THOMSSEN

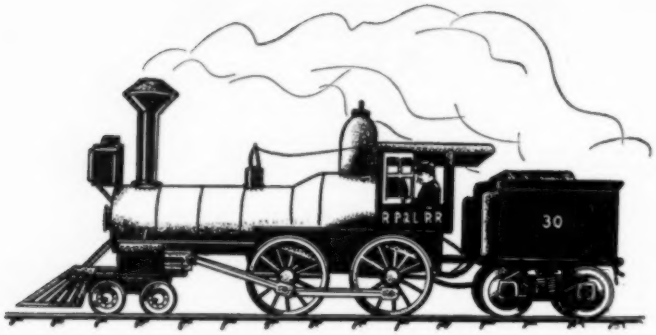
To meet these specifications numerous types of protective creams were sold. Included in their composition are a variety of ingredients, the more common of which are soap, silicate of soda, starch, lanolin, waxes, glyceryl monostearate, mineral oil and vegetable oils. Their composition does not differ too widely from regular beautifying hand creams. Some of these dealers, sensing a profitable outlet for the use of other types of cosmetics, have gone to private brand firms and purchased other toiletries in bulk. Most wash rooms are equipped with liquid soap dispensers. These afford a ready method of meting out liquid hand lotions, particularly. The material dispensed in most cases unfortunately is made on a price rather than a quality basis. Seldom do brand names appear on the dispensers. In many instances the lotions consist of thin, watery concoctions of gums or oil emulsions that leave an unpleasant after-effect. The perfume, too, is cheap. Those firms which brought out dispensers to handle higher priced, trademarked, recognized products of quality are at a disadvantage and have made little progress in this field. A recent survey covering the use of liquid lotions in hand dispensers among sanitary supply dealers indicates that the volume is on the decline. There is less interest now than during the war years on the part of building superintendents and factory maintenance staffs to install such a service.

Considerable publicity was given about three years ago to preparations that were to serve both as a lotion and a soap. These two-fold purpose cosmetics were offered to sanitary supply jobbers for use in liquid dispensers with the assertion that women take millions of bottles of hand lotion to their various places of employment. This business, it was pointed out, all went to drug and department stores. By the use of these lotion-soap combinations in liquid soap dispensers it was hoped that a new cosmetic market could be built up for sanitary supply dealers. Our investigations indicate this idea did not catch on and that users of lotions still prefer the use of trade-marked lotions or hand creams and not in combination with liquid soap.

It is true one finds face powder, talcum powders, aftershave lotions, brilliantines, shaving media and other toiletries in the dressing and powder rooms of private clubs, particularly country or golf clubs. These rooms are generally maintained on a higher, more sanitary standard than public wash rooms. In practically every case, however, products are offered in a large or "Jumbo" size. Products are set out for common use. The club steward or manager buys whatever brand suits his whim, unless some member happens to be in the toiletries business. Samples also have been distributed quite widely, but with doubtful success. There is considerable room for improvement in this regard.

The main weakness and difficulty to overcome in the consumption of cosmetics in public places is their use on a free basis. The consumer recognizes that the products he doesn't pay for are cheap and inferior in quality. No further attention is paid to the products after they have been used. While an opportunity to sell toiletries presents itself, no effort is made to cash in on it.

Another opportunity for inter-



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esting persons to buy toiletries under favorable circumstances in public places is to be found at public bathing beaches. For years it has been a common sight to see bathers at the water resorts carrying suntan preparations for application on the beach. The consumption of suntan cosmetics under these conditions is large. To seize upon the possibility of supplying vacationists with these toiletries, certain companies employ agents who sell their products directly to the bathers on the beach. The volume of business thus obtained is considerable, evidence for which is the increasingly competitive nature of this type of selling.

A MORE recent method of selling suntan preparations at beaches is through the use of vending machines. Located on or near the waterfront or in bath houses, this method of selling is very successful. The customer inserts a dime in this machine, stands before it and operates a dispensing mechanism which sprays out a quantity of sun screen liquid sufficient to protect him for his sojourn on the beach. We have been informed that the preliminary tests with this device indicate that it is popular. As a result, the installation of more machines at likely places is being expanded. The market is a large one. One of the main values of such merchandising method is that the consumer pays for the product. That imparts to him the impression that the material used is not cheap. A very definite barrier to the increased sale of cosmetics in public places, as we already have pointed out, is that they have been given away. The result has been the use of inferior products. If good quality suntan preparations can be sold successfully in vending machines, it is quite possible that other toiletries may also be sold through the same or related channels. In any case, the potential market we have been discussing merits careful observation and attention by the sanitary chemicals industry. If properly exploited, it may be the answer to increasing the interest of consumers in other directions. The fact that manufacturers of gum, candy and cigarettes enjoy a large volume through vending machine distribution is evidence that there are openings for other items.

Pure Water Test Indicator

A WATER purity indicator that quickly and accurately tests distilled or deionized water is now available from F. J. Stokes Machine Co. of Philadelphia. The device is based upon the principle that the conductivity of water is directly proportional to its ion content or degree of purity. It is calibrated from zero for chemically pure water to within the range of 0 to 30 p. p. m. of sodium chloride in terms of impurity content. It can be used for 110 V., 60 cycle A. C. current, though special models are available for other types of current and voltage. If desired, special glass dip cells for testing purified water in storage tanks for industrial purposes or threaded cells for permanent installations in tanks or piping are available.

Anti-Oxidant

THE chemical division of Koppers Co., Pittsburgh, is offering a bulletin on and samples of its non-staining, anti-oxidant for soap, oil and fats. This product is Di-tert-butyl-para-cresol, commonly termed DBPC. It is an effective anti-oxidant, particularly for use with hydrocarbon materials. A dry crystalline solid, DBPC is insoluble in acids or alkalies but readily soluble in common organic solvents. No staining or corrosion results from its use. Besides being applicable for soap, fats and oils for the prevention of rancidity and discoloration, it is a good stabilizer for liquid insecticides containing pyrethrum. The bulletin bears the number T-C-8-115.

Truck Conveyor

A NEW type tow conveyor for automatically transporting ordinary flat or other type warehouse trucks has been developed by Jervis B. Webb Co., Detroit. This so-called "Towveyor" consists of a chain conveyor running in a slot below the floor. A towing pin mechanism is bolted to the front end of any standard type two-wheel or four-wheel truck. The workman drops the pin into the slot and the load goes on its route without further attention to any required point where it is disengaged. The mechanism presents no obstacles on the floor, as the slot may be trucked over, nor is there any overhead structure to interfere with traffic.

Improved Tape

INDUSTRIAL TAPE CO., of New Brunswick, N. J., is featuring its "Permacel" tape for many purposes. It is handy not only as a masking tape, but due to its high tensile strength and good adhesion, it may be used to tie together many items that are prone to loosen when fastened by the routine methods.

Solvay Cleaning Booklets

Three new booklets, one on a new cleanser, "HCX322," were announced recently by Solvay Sales Division of Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y. The new Solvay cleanser is designed for domestic and institutional hand cleansing operations. Two other folders cover "Nytron," a synthetic detergent, for use in laundering and as a general maintenance cleaner. Properties and directions for use of these cleaners in various applications are described and illustrated.

New Diamond Booklet

A 16-page booklet, "The Story of the Chemicals You Live By," which describes eight major groups of chemical products and their uses in industry, was issued recently by Diamond Alkali Co., Cleveland. The illustrated booklet covers soda ash, caustic soda, bicarbonate of soda, chlorine, silicates, calcium carbonates, chromates and specialty chemicals and lists their economic significance. Copies of the booklet are available free by writing the company at 300 Union Commerce Building, Cleveland 14, O., or from district sales offices.

New MM&R Price List

A fourth quarter, 1949, catalog and price list of its essential oils, aromatic chemicals and flavoring and perfuming materials was issued recently by Magnus, Mabee & Reynard, Inc., New York.

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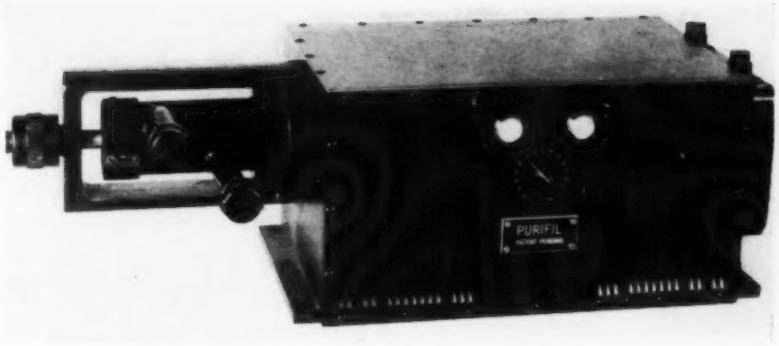
Detects Solids in Liquid

A new electronic device, known as "Purifil," for providing fast detection of minute solids or impurities suspended in transparent liquids, was announced recently by Electric Eye Equipment Co., Danville, Ill. The unit can be used to actuate a warning device to indicate when suspended impurities exceed a limit. It can also be used to perform any on-off operation that can be initiated by a relay. The detecting device depends upon the ratio of scattered light to transmitted light falling on a single phototube. A typical example of a "Purifil" application is in the detection of turbidity in such clarifying operations as filtration or centrifugation. In filtration the instrument may be used to detect breakage of the filter medium indicated by increased cloudiness of the filtrate. The degree of cloudiness at which the instrument functions is adjusted by turning an index knob. When adjusted for maximum sensitivity, the instrument will function at five p.p.m. of bleaching earth suspended in oil, or at 0.5 p.p.m. of nickel catalyst suspended in hydrogenated fat.

New Atlas Fatty Acids

A new series of fatty acids, with true stearic acid content as high as 97 per cent or more, is now available from Atlas Powder Co., Wilmington, Del., it was announced recently in a joint statement by J. R. Frorer, general manager of the industrial chemicals department of Atlas Powder Co., Wilmington, Del., and Henry Odeen, president of Trendex Co., Memphis. Purification of stearic and other hard fatty acids from natural fats is accomplished by a basically new and exclusive process owned and operated by Trendex Co. The process yields finished products of a quality hitherto unobtainable in commerce. It is a patented process that was developed in the laboratories of HumKo Co., vegetable oil processors of Memphis. The firm has no further interest in the Trendex process, however, except that it has contracted to supply basic raw materials. Besides improved color, odor and taste specifications, the unsaponifiable matter in the new acids is as low as 0.1 per cent and the average iodine value is below 0.5 per cent. The acids are said to have excellent heat stability. Three high-purity hard fatty acids, differing in proportions of stearic and palmitic acids, have been announced. They include 70, 80 and 97 per cent stearic acids under the brand name, "Hystrene," a trade mark of Trendex Co.



New "Purifil" electronic device (above) detects solids or impurities in liquids. Made by Electric Eye Equipment Co., Danville, Ill.

"Dust Absorber" for Mops

"Dust Absorber," a chemical to treat dust cloths and mops, was announced recently by Parlee Co., Indianapolis, Ind. The new material is non-inflammable and can be applied by spraying, saturation or by hand. It is packaged in containers from four ounces to 55 gallon drums, and is priced at: 59 cents a pint, $2.95 per gallon and $2.00 per gallon in 55 gallon drums. The product is said to contain neither oil nor solvent.

Soaps, Detergents Book

Soaps and Detergents by E. G. Thomssen and J. W. McCutcheon. Published by MacNair-Dorland Co., New York. 512 pages, cloth binding, price $9.00.

This text replaces "Modern Soap Making" by E. G. Thomssen and C. R. Kemp, which volume has been out of print for several years. The scope of the new text has been expanded to include the new developments of the soap industry, i.e., the synthetic detergents, continuous soap making processes and other continuous operations and processes introduced in this field. Two new chapters are included in the text: "Perfuming and Coloring Soaps" and "Synthetic Detergents." The first mentioned, covers the methods and problems involved in coloring and perfuming soap and soap products, and includes, also, a tabulation of the action of soap or alkalis, light, and air on some of the common aromatics. The detergent chapter deals with the classification of the synthetic compounds and refers to a tabulation in the appendix of more than 250 surface active compounds, their uses, formulas, and manufacturers. The balance of the book is a revision of the material considered in the previous edition. Sections dealing with the soap making methods, glycerine recovery and soap products have been completely rewritten to include the most recent developments. Some of the data appearing in the appendix of the "Modern Soap Making" book has been omitted from this volume, as it is readily available from other sources. The 66 photographs illustrating the text contribute to a better understanding of the material under discussion.

Wood Preservative Book

An illustrated 25-page booklet on the use of pentachlorophenol as a wood preservative was issued recently by Monsanto Chemical Co., St. Louis. The booklet cites use-examples for farm applications. A brief history of the chemical's development, something of its mode of operation and methods of application are included. "Penta," as the product is designated, is sold through hardware and farm supply stores, lumber yards, mail order houses and paint stores.

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Antara Extra

An Antara Products Publication

Detergents
Emulsifiers
Wetting Agents
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Carbonyl Iron Powder

444 MADISON AVENUE NEW YORK 22, N. Y. DECEMBER, 1949

TEN NEW ANTARA PRODUCTS INTRODUCED AT EXPOSITIONS

Ten new products were displayed by Antara Products, General Aniline and Film Corporation, at the East and West Coast chemical shows.

Antara Products showed products and applications through a unique exhibit with color transparencies, first at the San Francisco Chemical Exposition November 1 to 5, and second at the Exposition of Chemical Industries, Grand Central Palace, New York City, Nov. 28th to Dec. 3.

Products on display were Carbonyl Iron Powder, a remarkably pure form of iron used extensively in high frequency electronic cores, and nine surface active agents which have a host of wetting, detergent, emulsifying and dispersing applications.

Surface active agents shown were: Antarox A-200 and A-400, two stable, liquid non-ionics; Antarox B-100, D-100 and B-290, three versatile emulsifiers; and Antaron L-520, L-135, L-245 and L-114 – anionic powders and gels with varied uses from general cleaning operations and the manufacture of specialty cleaners to the formulation of special products with detergent, wetting, emulsifying and dispersing properties where foam is undesirable.

Unusual New Synthetic Detergents Booklet Offered

A new, descriptive folder said to be the most unusual and revolutionary of its kind ever printed has been issued by Antara Products, General Aniline & Film Corporation, 444 Madison Avenue, New York City. Entitled "Synthetic Detergents – Their History & Applications", the new folder is written in non-technical language and designed to acquaint laymen buyers with simple facts about these materials.

The folder defines both detergents and synthetic detergents and explains the need for the latter in industry, home, textile field, cosmetics, insect and weed killers, institutional cleaning, community life and in thousands of other places where their outstanding properties help make better products at lower cost.

The three general types of synthetic detergents – anionic, cationic, and non-ionic – are explained, along with the advantages of each type.

An easy-to-use chart gives the name, type, family and uses of 19 Antara Products Surface Active Agents known as Antarox, Antaron and Antarane.

Copies of the folder may be had by writing the company.

Canadian Company Set Up To Make Non-Ionics

A new Canadian company for the manufacture of synthetic non-ionic surface active agents has been formed in Toronto, according to Jack Frye, President of General Aniline & Film Corporation.

Known as Chemical Developments of Canada, Ltd., the new company is jointly owned by General Aniline & Film Corporation and Standard Chemical Co., Ltd., Canada.

The Canadian organization will manufacture organic chemicals based upon "know-how" and assigned patents of General Aniline & Film Corporation.

Many of the proposed products have not been produced heretofore in Canada.

The wide experience of General Aniline & Film Corporation in the chemical field will enable the new Canadian company to escape many of the problems normally attending initial manufacture and should insure its rapid progress to an established place among the chemical industries of Canada.

Until these surface active agents are being produced in Canada, they will be available from the United States through the Standard Chemical Company, Ltd., in Canada.

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PRODUCTS AND PROCESSES

Oil Stain Remover

A composition for removing oil stains from fabrics consists of a mixture containing at least one acid-resistant compound having a strong wetting action, at least one terpene alcohol, at least one other organic solvent, a fatty-acid soap not exceeding 15 per cent of the weight of the mixture, and if desired, water. Soc. pour l'ind. chim. a Bale, British Patent No. 573,145.

Saponification Equipment

Fat and water are passed into an autoclave containing a mixer. This mixture is passed by a pump through tubing in which it is heated electrically to 240° C. and then is returned to the autoclave. After saponification is complete, which is ascertained by sampling, the mixture is passed under pressure to an expansion vessel in which the water is partially evaporated and permitted to escape as a vapor while the free fatty acids and the glycerine are drawn off. E. Bohm and J. Zucker, Swiss Patent No. 249,126; through *Chem. Abs.*

Nonionic Agent

Polymeric unsaturated or saturated fatty acids, obtained by prolonged heating of the monomer and distilling off the unreacted monomer in vacuo, are esterified with two or more molecules of a polyalkylene glycol or oxide having a molecular weight exceeding 300. Sulfuric acid is used as a catalyst. Acids of soybean, castor, linseed, and tung oil, were used. R. H. Kienle and G. P. Whitcomb, to Am. Cyanamid Co. British Patent No. 621,104.

Optical Bleaches

Soap or a synthetic detergent is mixed with a nondyeing compound substantive to cellulose, to increase the white appearance of such materials as cellulosic fibers, wool, silk, and nylon, by generating blue to violet fluorescence when exposed to daylight or to ultraviolet rays. The fluorescent compound may consist of diimidazoles obtained from aromatic diamines and terephthalic acid. It can be dispersed in the detergent as such or in the form of a metal salt. In an example, 100 kg. of melted soap of 60 per cent fatty-acid content are stirred with 0.5 kg. of 1,4-bis(2-benzimidazolyl)benzene. Goods scoured with this composition are superior in whiteness to those treated with ordinary soap. Ciba Ltd. Swiss Patent No. 253,876; through *Chem. Abs.*

Continuous Fat Splitting

In a continuous process for the hydrolysis of fats to produce glycerole and fatty acids, water and fat are introduced countercurrently under pressure into opposite ends of the operating apparatus in the presence of small amounts of zinc soaps or other water-insoluble soaps as catalyst. The resulting fatty acids are dried in vacuo and distilled immediately without being cooled and without removing the metal soap. The distillation residue, containing the soap, is then used as part of the catalyst for a subsequent run. V. Mills, to Procter & Gamble Co. British Patent No. 617,929.

Soap Substitute

Colloidal alumina hydrate mixed with powdered soapwort and sodium naphthalene sulfonate serves as a soap substitute. A colored dye may be added if desired. The product does not cause irritation or have a drying effect on the skin. A. Wander A.-G. Swiss Patent No. 226,570; through *Chem. Abs.*

Hydrogenation of Palm Oil

By selective hydrogenation, the orange color in palm oil is retained when the process is conducted at low temperatures and high pressures. In the hydrogenation of naphthalene and anthracene, it is possible to carry out the process by steps, by control of the amount of catalyst used. H. I. Waterman, *Chimie & Industrie 61*, 125-33 (1949); through *Chem. Abs.*

Dentifrice With Soap

A dentifrice is obtained by mixing two parts of the sodium salt of 2-hendecyl-benzimidazole with 98 parts of soap, with or without the addition of a salt of a sulfated fatty acid. Soc. pour l'ind. chim. a Bale, Swiss Patent No. 225,260; through *Chem. Abs.*

Continuous Soap Fitting

Washed soap can be fitted and then separated into niger and molten neat soap in a continuous stream by slow travel in horizontal layers through troughs which contain weirs. J. Crosfield & Sons Ltd. and R. V. Owen, British Patent No. 623,224.

Soap as a Bactericide

Tests indicate that soap is fairly effective against gonococci and hemolytic streptococci, but less effective against staphylococci and dysenteric microbes. E. G. Livkina, *Zhur. Mikrobiol., Epidemiol. Immunobiol.* (1947) No. 10, 26-8; through *Chem. Abs.*

Decolorizing Detergents

Too dark-colored solutions of detergents such as sulfated and sulfonated products are decolorized by treating with fir exanol, peroxides, salts of weak peracids or their mixtures such as benzoyl peroxide or sodium peroxide. As a rule less than one per cent is sufficient to make the solutions suitable for use as shampoos and similar products. N. V. de Bataafsche Petroleum Maatschappij. Dutch Patent No. 63,505; through *Chem. Abs.*

Amide Detergent

A new amide derivative useful as a washing agent for textiles is prepared by treating one mol of technical stearamide with one of crotonaldehyde and two of sodium bisulfite in a solvent and in the presence of a secondary amine. A crystalline product can be obtained. Ciba Ltd. Swiss Patent No. 246,668; through *Chem. Abs.*

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SOAP PLANT OBSERVER

By John W. McCutcheon

PLANT process and analytical control has been under discussion in this column for the past three months. Process control from the point of view of the types of analyses required for reasonable standards of quality in various departments of a typical soap plant was covered last month. Some mention was made of costs in relation to service desired and methods of procuring a control program with a minimum investment were outlined. It was also pointed out that because analyses sometimes multiply beyond all reason it is well to do a periodic pruning job.

For example, the sales department of a soap concern is notified by a customer that glycerine in drum 128 dated 10/16/49 was off standard in chlorine content. Perhaps the complaint is only mentioned off-hand on the golf course, but by the time it has filtered down through the vice-president, technical director, plant manager and foreman, it has assumed a proportion out of all relation to that originally intended. Now "the sacrificial goat" must be slaughtered. The easy way is for the technical director to proclaim that in future every drum will be sampled and analyzed for chlorine. Never again will such a complaint be received! The hard way is to find out how the chlorine got in the drum in the first place—through faulty drum washing, priming of the still, or from some other source. In the particular case in question it was discovered that the carbon black being used for bleaching purposes was sufficiently high in chlorides to cause all the trouble. The specification covering this material was modified accordingly by setting a limit on this impurity. The tests necessary to control chloride content were conducted on each receipt of bleach plus those of a precautionary nature run on each tank of product before drumming. It is surprisng how many "scare" tests creep into general routine control in the course of a few

years. In the above case the method of processing had nothing to do with the difficulty. In most cases, however, processing plays a part. The careless operation of the cold soap framing department can make it necessary for a superfat to be run on every single frame, whereas another plant, with a conscientious operator, might run for years with no more control than an occasional test. In the case of the glycerine problem cited above, the chloride could very easily have resulted from poor inspection of drums, or a priming still.

Process control should go further than to specify where and when to take samples. It should indicate in a clear and readable way just how each operation is to be conducted. Representing the accumulated experience of many persons, it should be specific to the operation at hand and it should be kept completely up to date by periodic revision. Since process control represents a large part of fundamental "know how," the written detail should be confined to those persons who are entrusted with the specific operation. Such documentation removes the personal element from the job. It makes it easier for a new man to take charge; makes it easier to train new employees and gives management better control.

Process Instructions

THE following is a brief but specific example of how to handle process instructions. An excerpt from process instructions issued to cover a part of crude glycerine manufacture, it was prepared by the writer while in charge of that operation. The topics treated under evaporation cover: (1) general outline, (2) starting up, (3) operating, (4) finishing, (5) dropping a batch, (6) transferring crude from evaporator to scale tank, (7) transferring crude from scale tank to storage, (8) handling the salt box, (9) washing down the evaporator. The section quoted below covers (2) starting up:

"(1) Turn on steam full to ejectors—valves D and F.

"(2) Turn on water to inner condenser-valve E, just sufficient to maintain the tail pipe H in a moderately warm condition. At present time this is approximately ¼ to ½ turn.

"(3) Open the large intercommunicating valve 'C.'

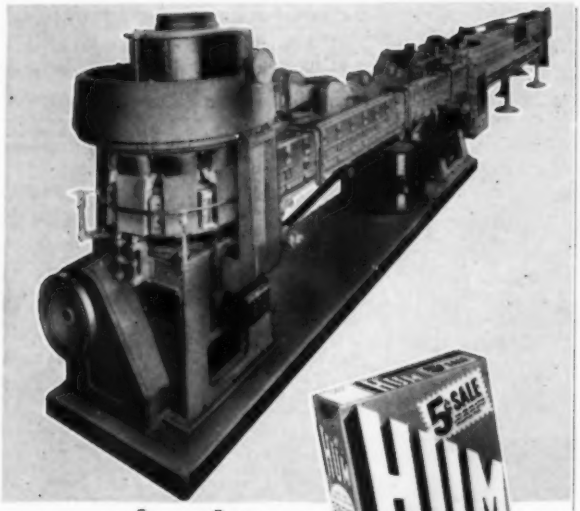
"(4) Turn on the water to the condenser 'A' through valve 'B.' Open sufficient to keep large tail pipe 'G' luke-warm, possibly at about 100° F. The amount this valve has to be opened depends on the temperature of the cooling water and the rate of evaporation. This last is very rapid at first and becomes low at the end. At the start of a run, the usual valve setting is about two full turns. This may be decreased to possibly ½ turn toward the end of the run.

"(5) Open valve connecting vacuum equipment to gauge: one at equipment, one on control panel.

"(6) Open valve on top of evaporating chamber which connects to manometer and recording gauge.

"(7) Check instruments to see that they are recording properly: mercury manometer, vacuum recorder, and temperature recorder.

"(8) Check the water circu-



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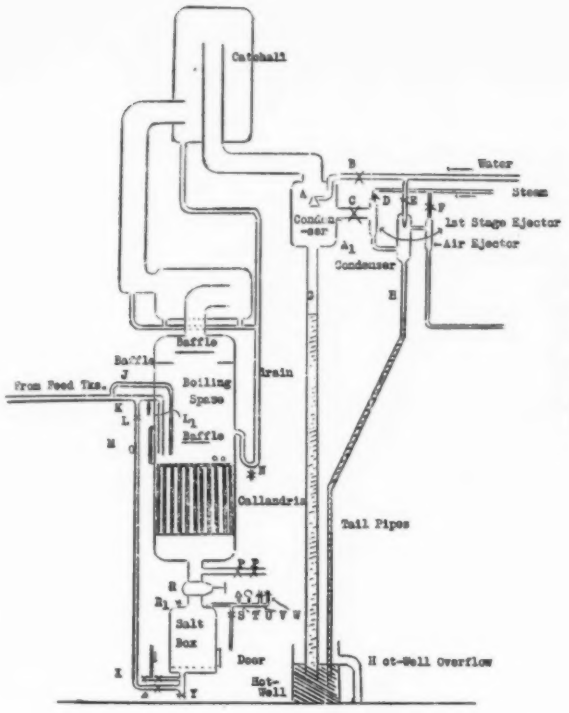

Diagrammatic representation at left is of part of the crude glycerine manufacturing process referred to in the accompanying article.

lation system. For details see 'water system.'

"(9) Post operation sheet with required data. For detail see 'control reports.'

"(10) Check feedtank to be used for the following: outage, pH and soda ash test.

"(11) Set the feed tank line. Each evaporator has a separate feed line. The top line is for evaporator #2, the bottom one for #1. A bleeder valve is connected to each line. These should be open except for that on the line feeding the evaporator. This insures that no two tanks of water can be drawn to the same evaporator.

"(12) When the vacuum of approximately 20" of mercury has been obtained, open the large valve 'K' and fill the evaporator to the proper level indicated on the gauge glass.

"(13) Close valve K.

"(14) Check vacuum to make certain equipment is in good working condition. It should be 27" or better before the steam is turned on. For vacuum difficulties see comments below.

"(15) Turn on steam in the callandria and bring up to 15 lbs. pressure. If the glycerine content of the water is low, evaporation may become so fast that there will be undue foaming and priming. In such cases reduce the steam pressure accordingly. Always keep the return line 'N' from cold to just warm.

"(16) Open the air bleeder line from the top of the callandria to allow the escape of air and as an indication to the operator of his flow of steam.

"(17) Open by-pass feed valve 'J' just sufficient to maintain the liquid level against the rate of evaporation. This is approximately ¼ to ½ turn. This valve will require adjustment as the rate of evaporation slows up toward the end of the run."

* * *

RECENT data on the oil and fat situation from both government and private sources indicate that the United States will probably have a surplus during the coming year. With world production and consumption becoming more nearly normal, plus the fact that sterling area countries will tend to purchase outside the United States, there is little indication of a price rise in basic soap fat materials. Imports of the common fats and oils in anticipation of a U. S. surplus and to promote more even world distribution has been restricted through the requirements of import licenses ((Public Law 155, July 1, 1949, expiring June 30, 1950). Coconut oil, which is still 23 per cent above wartime ceiling prices, may decrease in the face of increased production in the Philippines. Tallow is already 30 per cent below the wartime ceiling price and 5 per cent below the 1937-1941 average. (From data given in *Fats & Oils Situation*, Dept. of Agriculture, October 1949). This situation may be one of gloom for the renderer, but does permit the small soapmaker to operate with less capital investment for raw materials and with greater price security.

* * *

RETAIL synthetic detergents continue to show increased use in both hard and soft water areas. Heavy duty detergents introduced in all areas continue to show a decided climb in sales, but not at the expense of other soap and light duty detergent products. It is apparently filling a need not elsewhere provided. Industrial products continue to multiply. "Ultrawet 60L," by Atlantic Refining Co., Philadelphia, is a new organic salt of an alkyl aryl sulfonate marketed as a viscous, clear, amber liquid, suitable for household, industrial and cosmetic uses. It is practically odorless and sells in 60 per cent active concentration at 22½ cents a pound, tank cars f. o. b. Philadelphia. "Advawet 10," made by Advance Solvents and Chemical Corp., New York, is also offered as a pale yellow liquid, constitution and strength unstated. suitable as a dispersant for latex paints, textile treating emulsions, etc. The price is 35 cents a pound in drums, f. o. b. New York.

Niagara Filter Reps.

Niagara Filter Corp., Buffalo, recently announced the appointment of Process Industries Engineers, Inc., Pittsburgh, as its exclusive representative for its line of Niagara Pressure Leaf Filters for the chemical and process industries, among others. The company will cover western Pennsylvania, southern Ohio and part of West Virginia.

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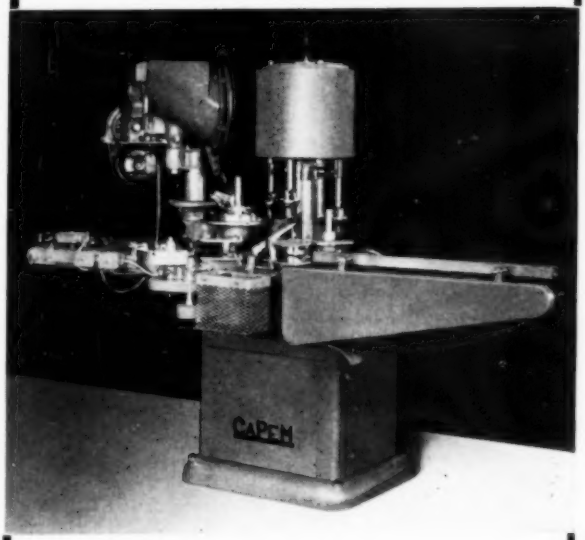

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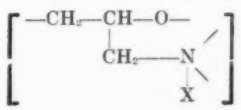
No. 2,483,701, Polishing Composition, patented Oct. 4, 1949 by Thomas G. Hawley, Jr., Bernard J. Kummer, and John W. Barnes, Jr., Chicago, Ill., assignors to Diversey Corporation, a corporation of Illinois. The method of making a wax composition is patented which comprises mixing by weight of the composition about 6.10% of a wax, about 4.05% of a rosin-maleic anhydride-glycerine resin containing from 72.8 to 86.0% by weight of rosin, 5.0 to 14.1% of maleic anhydride and 9.0 to 13.1% glycerine, and about 1.80% of oleic acid, heating and stirring to blend the mass into a homogenous mixture, adjusting the temperature to about 205-210° F., adding about 1.05% monoethanolamine, adding about 43% water at about 205-210° F., stirring while holding the temperature at approximately 200° F. until the solids are completely emulsified, and adding about 44% water at room temperature and cooling the emulsion.

No. 2,484,979, Method of Modifying Glyceride Oils, patented Oct. 18, 1949 by George Barsky, New York, assignor to E. F. Drew & Co., Inc., New York, a corporation of Delaware. A method is described of treating non-hydroxylated mixed glyceride non-drying oils to change the chemical composition thereof which comprises adding to said oil a relatively small amount of boric acid, heating the mixture for a sufficient length of time at a sufficiently high temperature to liberate free fatty acids from the oil, distilling said acids from said mixture and substantially freeing the residue from combined boric acid.

No. 2,483,749, Quaternary Ammonium Salts, patented Oct. 4, 1949 by Harold Wittcoff, Minneapolis, Minn., asignor to General Mills, Inc., a corporation of Delaware. The patent covers a quaternary ammonium salt of a polymerized epihalohydrin, the quaternary ammonium salt having the following unit structure



in which X is halogen and N is a nitrogen atom contained in a heterocyclic ring selected from the group consisting of pyridine, quinoline, isoquinoline, and acridine rings.

No. 2,484,788, Deodorization and Distillation of Fats, patented Oct. 11, 1949 by James K. Gunther, Decatur, Ind., assignor, by mesne assignments, to Swift & Company, Chicago, Ill., a corporation of Illinois. A process for deodorizing fats is covered which comprises: confining a body of fat within

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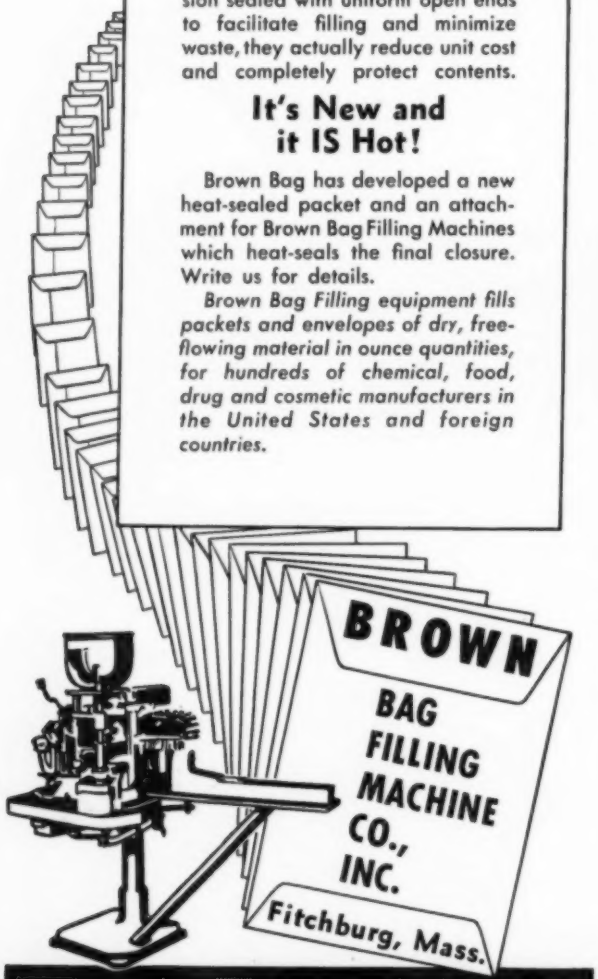

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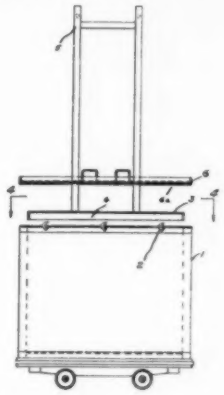
a still, continuously subjecting the contents of said still to a high degree of vacuum, introducing steam into said body of fat, supplying sufficient heat to said fat to vaporize the impurities existing therein, introducing tangentially the evolved vapors and entrained particles of fat into a cyclone separating zone contained entirely within said still thereby imparting a rapid whirling motion whereby said particles of fat are centrifugally separated from said vapors, reversing the direction of flow of the vapors in said zone while separating said particles of fat from the vapors as a liquid, returning the separated liquid to a point below the surface of said body of fat, and withdrawing the vaporized ingredients from the still.

No. 2,485,095, Insecticides, patented Oct. 18, 1949 by Walter D. Harris, Naugatuck, and Herman D. Tate, Woodbridge, Conn., assignors to United States Rubber Company, New York, a corporation of New Jersey. The patent covers a beta-monohaloethyl ester of a monohalogenated benzene-sulfonic acid selected from the group consisting of beta-chloroethyl esters and beta-bromoethyl esters of meta- and para- chlorobenzene and meta- and para- bromobenzene and meta- and para- fluobenzene sulfonic acids.

No. 2,484,098, Bar Soap Manufacture, patented Oct. 11, 1949 by Alvin H. Knoll, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio. The patent covers the improvement in processes for making bar soap which include preparing a mass of soap which is at least partially in the neat soap phase and chilling said soap while in a mass of at least slab size until fully solidified, which comprises: causing a mass of soap of uniform composition to flow through a grid having numerous small closely placed apertures, and causing the soap strands emerging from said apertures



to reunite into an integral mass, the soap mass during said flow being at a temperature above that point at which the soap substantially loses its pasty cohesiveness as a result of solidification and being within the temperature range in which the soap is at least partially in the neat phase, and thereafter cooling said soap until fully solidified, whereby the finished bars of soap cut from the mass have a materially reduced tendency to develop cracks during use.

No. 2,485,916, Solvent Extraction of Cottonseed Oil, patented Oct. 25, 1949 by Alicia Perez, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware. An improved method of processing a vegetable material is covered, which comprises the steps of contacting said vegetable material with a solvent comprising a monohydric alcohol having up to three carbon atoms per molecule and between 0.3 per cent by weight and a weight of an alkali metal soap which causes said alcohol solution to lose its fluidity; heating said contact mixture at a temperature between about 40°C. and the boiling point of said solvent for a period of at least 10 minutes; separating said solvent and dissolved material from said vegetable material; and removing vegetable oil from said vegetable material.

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Soft Soap Manufacture

(*From Page 45*)

ished soap. The reason for this with potash soaps will be obvious. In smaller factories direct-fired open kettles are still used, but by far the greater proportion of soft soap today is boiled with steam. Steam-jacketed mixers of the vertical soap crutcher type are useful. Steam coils and a discharge valve are notable features of such equipment. Agitators suitable for kneading the dough-like mass are also desirable features.

Saponification is normally aided by the application of external heat. The caustic alkali may first be calculated to saponify completely and furnish an excess of free alkali that, in the finished soap, ranges from 0.2 to 1.5 per cent (although this figure is sometimes exceeded). With a highly rosined kettle charge, the finished soap should be as nearly neutral as possible.

The initial strength of the caustic lye may be adjusted slightly in accordance with the f.f.a. and general character of the oils and fats to be saponified. The usual procedure is to use a weaker lye at first—15 to 20° Bé. An all-round strength of 19° Bé is recommended by Datta and others, and I would add that this is often a very convenient concentration of lye to use, although in some cases it is preferable to use a 15° Bé lye (for example) at the commencement of operations and a 25° Bé or stronger lye towards the finish. The combined strength of the weak and strong lyes is apt to average 20-25 per cent KOH, i.e. from 22 to 27° Bé, but this is by no means an infallible rule. The procedure of using only one strength of lye but of adding water to the kettle at an early stage amounts in practice to the same thing.

The caustic lye is run into the kettle and brought to the boil. The melted charge is then added as rapidly as possible, due care being taken to prevent the contents from boiling over. The mass soon emulsifies and saponification sets in rapidly. During the period of boiling required for the completion of the process, potassium carbonate to the extent of two to five per cent of the total kettle charge, is frequently added in aqueous solution or dissolved in the lye. Less frequently potassium chloride is added,—the idea being to stabilize the finished soap and also improve its appearance. Water or lye may be added as required. When rosin is used, it is occasionally melted in with the oils, but the best plan is to add it after the other stocks have been saponified.

The soap now thickens and becomes glossy, the froth subsiding. The rest of the oil (some having been held back for adjusting purposes) is then added. This method is useful for the saponification of fatty acids as well as natural oils.

The foregoing procedure may be varied by running the lye into the oils or preferably by running alternate small proportions of lye and oils into the kettle. Sometimes, as Thomssen describes, the soap is run into barrels as soon as it begins to "bunch," the saponification process proceeding to its conclusion in the barrels.

If the lye is added gradually to the fat charge in the kettle or crutcher, it is essential to speed up the rate of flow immediately saponification begins and the emulsion forms, in order to prevent the mass bunching. If this change does set in, a large amount of lye should be added immediately. On the other hand, if separation of the emulsion has occurred, no further lye should be added until the mass thickens up again uniformly. Precautions at this stage should also be taken to minimize the risk of boiling over—by spraying in water.

As Dr. J. H. Wigner observes ("Soap Manufacture"), "It is not at first an easy matter to learn to control the boiling by proper manipulation of the steam. . . . The art of the process . . . is to become familiar with the different appearances which the soap should have at various stages, and to detect any appearance which may indicate abnormal conditions."

Towards the end of the process, when the mass has become clear, it is essential to test for completeness of saponification. Texture, stringiness and water content may be roughly tested between finger and thumb. A small sample withdrawn from the kettle should give a clear solution in hot distilled water. If a turbid solution results, unsaponified fat is almost certainly present, in which case boiling is continued with some added lye until a further test shows satisfactory solubility.

Sheet glass tests are very useful. A small sample from the kettle is allowed to cool on a sheet of glass. A properly saponified sample will set quickly to the desired firm, salve-like consistency, exhibiting uniform translucency when held towards the light. A slightly opaque "lye edge" should gradually form around the main body of the sample.

If there is unsaponified fat present, the interior of the sample will show cloudy—and a similar sample will not dissolve clearly in hot distilled water. If excess caustic lye is present, the sample will be slippery on the plate or uniformly turbid and whiteish. If excess water is present, the sample will usually be stringy, drawing out into threads when touched. If too little water is present, the lye edge appears more quickly. A sample with excess potassium carbonate will be too loose and soft in consistency, whereas one that needs a carbonate solution or water addition will tend to be too firm and rubber-like.

At this stage the kettle is adjusted by suitable additions and subsequently re-sampled. A laboratory estimation for free alkali should then be carried out. Bleaching is sometimes carried out by treatment with chlorinated bleaching liquor—followed by a further determination of free alkali.

The finished soap is filled into tin containers or barrels and stored in a cool place. Metal containers for soft soap should be heavily tinned, to prevent as far as possible the development of electro-chemical action and the consequent black discoloration of the soap. In the U.K. heavily wax-impregnated pulp containers have been used with a fair degree of success for the retail packaging of soft soap as marketed by drug stores.

SANITARY PRODUCTS
A SECTION OF SOAP

CHEMICAL Specialties Manufacturers Association holds its first meeting in Washington, D. C., under this new title and its five-group divisional set-up. The current meeting actually is the 36th annual convention of the former NAIDM. But changed conditions and expanded activities in the industry groups which it has served since 1914 have brought a new organization to meet the wider needs of its membership. Judging from advance reservations, the Washington meeting is one of the largest in the history of the former NAIDM, bespeaking a greater interest in its new activities and sectionalized program. Its opportunity to do a broader service job for member firms under the new arrangement is excellent, warranting the confidence and full support of the industry.

THE proposal to include DDT, dimethyl phthalate and several other insecticide materials in the new edition of the U. S. Pharmacopoeia has been giving considerable concern to insecticide manufacturers, and to representatives of trade associations in the industry over the past few weeks. Burdened as the industry already is with restrictions, there is no desire to see a situation result which might involve dual registrations, investigations and examinations. There is a natural fear that the listing of these widely used insecticide materials in the USP might result in their becoming classified as "drugs" and subject to all the provisions of the Federal Food, Drug and Cosmetic Act.

Registration and compliance with container, packaging and labeling requirements under the Federal Insecticide, Fungicide and Rodenticide Act is quite complicated enough, insecticide manufacturers have good reason to feel. A complete hodge podge of divided authority, conflicting requirements and interminable legal and technical complications could very readily result from "drug" status being imposed upon insecticides generally, simply because some insecticides have a few comparatively unimportant drug uses.

Latest reports from the conferees indicate that the situation may be straightened out without the insecticide trade being unfairly penalized. A provision that the USP references will apply only to materials indicated by their labels to be for medicinal use would seem to cover the situation satisfactorily.

A PROPOSED revision of Specification 784 of the Bureau of Federal Supply for Water Emulsion Floor Wax has stirred up considerable controversy among manufacturers and users of floor wax. Discussion is anticipated at the current meeting of the Chemical Specialties Manufacturers Association, and at a conference sponsored by the Bureau and scheduled for December 8th in Washington, immediately after the close of the CSMA gathering. Our agents tell us, incidentally, that there is considerable opposition in some quarters to features of the specification which, it is charged, favor employment in floor waxes of a trade-marked colloidal silica preparation.

Also included in the new specification is a proviso that, to be acceptable, all products must carry the seal of approval of the Underwriters' Laboratories as regards fire and casualty hazards. Although this is something of a new departure in floor wax specification writing, we question that there will be any serious objection to this provision by the better elements in the trade. But with other features of the specification, particularly the section referred to above, there will be vigorous disagreement in some quarters. If you are interested, the time to present your views is at the December 8th meeting.

Label Warnings...

By Dr. C. C. McDonnell

THE poison, caution and warning labeling provisions of the Federal Insecticide, Fungicide and Rodenticide Act include (a), in case "the preparation is highly toxic to man" that the name and percentage amount of each active ingredient be stated on the label; (b) that the label accompanying economic poisons contain directions for use which are "adequate for the protection of the public"; (c) that the label contain "a warning or caution statement, which may be necessary and if complied with adequate to prevent injury to living man and other vertebrate animals, vegetation, and useful invertebrate animals"; (d) that a product is misbranded if "when used as directed or in accordance with commonly recognized practice it shall be injurious to living man or other vertebrate animals, . . . to which it is applied, or to the person applying such economic poison"; (e) that "any economic poison which contains any substance or substances in quantities highly toxic to man, . . . the label shall bear . . . the skull and crossbones, the word 'poison' prominently (*in red*) on a background of distinctly contrasting color, and a statement of an antidote for the economic poison." (The skull and crossbones need not be in red); and (f) that the information required to be on the label or labeling be "prominently placed thereon with such conspicuousness . . . and in such terms as to render it likely to be read and understood by the ordinary individual under customary conditions of purchase and use."

The act also provides that it is unlawful for any person to distribute, sell, or offer for sale in any Territory or in the District of Columbia, or to ship or deliver for shipment from any state to any other state, certain white powdered insecticides, including the arsenicals and fluorides, unless they have been distinctly colored or discolored; or "any other white powder economic poison which the Secretary . . . shall, by regulation, require to be distinctly colored or discolored."

The act authorizes the Secretary (of the U. S. Department of Agriculture) "to determine economic poisons, and quantities of substances contained in economic poisons, which are highly toxic to man; to determine standards of coloring or discoloring for economic poisons," and to prescribe poison, caution and warning labeling and antidotal statements, before such products may be registered.[1]

"Under the law a chemist or a manufacturer who discovers a new pesticide merely has to register it with the Department of Agriculture. The law is satisfied if the new chemical definitely kills pests. . . . But does it poison or kill humans? The law does not go into that." This is entirely erroneous.

IT is clearly apparent that the poison labeling requirements of the law are very broad and quite complicated, and subject to a considerable degree to interpretation by the Secretary of Agriculture.

Since the requirements are new for these types of products and no recognized standard poison labeling for them has ever been adopted, the Department's requirements since the Act became effective have been in the formulative stage and subject to changes and adjustments from time to time. While considerable liberality has been shown in order to prevent undue hardship, it has been quite a problem for manufacturers and, of necessity, caused them considerable inconvenience. As has been pointed out by Mr. Ward,[2] Pharmacologist of the Insecticide Division of the Department of Agriculture, in many cases the warn-

1 The statement in a recent article appearing in Collier's (June 25, 1949, p. 32), in referring to the Federal Act.

2 *Soap and Sanitary Chemicals*, June, 1949, p. 143.

ing and caution labeling used by manufacturers exceeds the minimum requirements of the Federal Insecticide, Fungicide and Rodenticide Act, which shows a desire on their part not only fully to comply with the law, but to protect the buyer and user of these products from possible hazard.

The Department has now adopted acceptable warning and caution statements that are applicable to most of the present formulations of economic poisons, and also antidotal statements for those formulations requiring such labeling under the regulations for the enforcement of the Act. These were published in the Federal Register, Nov. 18, 1949.

This is not only of great benefit to manufacturers of these products but standardizes the requirements and leads to greater protection of the public in the handling and use of economic poisons which may involve a poison hazard.

Scare articles have appeared in the press in recent months indicating that the use of insecticides, DDT in particular, caused a serious health hazard to the public and a wave of fear about using insecticides in general swept the country. The alarm became so widespread that official notice was taken of it by federal and state officials. The statement was made by Government scientists that no proved cases of DDT poisoning from foods were on record, and characterized the publicity as spreading unwarranted fear.

The editor of *Chemical and Engineering News*[a] stated "At this very moment some of the greatest nonsense we have heard in a long time is being tossed around in newspapers and elsewhere concerning the alleged dangers of 'chemicals' in foodstuffs."

The provision in the Federal Insecticide, Fungicide and Rodenticide Act authorizing the registration of products subject to it "under protest" has been criticized by certain Federal officials and the suggestion made that the Federal Food, Drug and Cosmetic Act be amended to provide for premarketing approval of new chemicals for spraying fruits, vegetables, etc., analogous to the "New Drug" control provisions of this Act.

The administrator of the Federal Insecticide, Fungicide and Rodenticide Act is authorized, before registering any product, to call for the formula, the complete labeling, and a "full description of the tests made and the results thereof upon which the claims are based." This not only applies to the newer preparations but to those regardless of the length of time they may have been on the market. Furthermore, registration is not a defense for the commission of any offense prohibited by the Act, and if a person is found to be guilty of an offense in connection with a product registered "under protest," the Act provides for double the normal fine and, in addition, a prison sentence up to one year may be imposed.

The Insecticide Division of the USDA has stated that there have been about 25,000 products registered, only four of which were registered "under protest" and but one of these was for use on food crops.

In including the provision for registration "under protest," the framers of the Act, and the Congress in enacting it, no doubt acted on the basis that it gave the administering officials too much power to act both as judge and jury. No one person, or limited group, knows all the answers. There are too many laws that give their administrators arbitrary and dictatorial powers.

The use of poisonous products is, of course, essential for the production of food crops and for the control of pests of man and other animals. While such use is practically universal, all must still agree that every possible practical safeguard should be taken to protect the public from poisoning or injury. Manufacturers have a legal and moral responsibility to formulate and market their products only for such uses as have been found beneficial, and to label them with adequate poison and warning statements for the protection of the public health.

Precautionary labeling can only be effective if those handling the products involved take full advantage of it. Young children cannot read and it is the duty of their parents, or those under whose care they are, to protect them by keeping poisonous products out of their reach. Most of the more serious cases of poisoning have been due to carelessness of adults in the storage and handling of these chemicals. Poisons such as lead and calcium arsenates, and fluorides are frequently kept in poorly lighted pantries and have been mistaken for flour, baking powder or other food material and used in preparing food for the table, with serious illness and fatalities resulting. Such poisonings have not been confined to the home but have also occurred in restaurants, institutions and even in hospitals. These poisonings have not been from the newer materials but from the standard insecticides that have been marketed for many years.

The handler and user of these so-called "economic poisons" should read the warning and caution labeling carefully and be guided by it. A good motto to follow is "Don't be scared—be careful."

[a] Vol. 27, No. 20, page 1425, May 16, 1949.

A discussion of poison, warning and caution labeling under Federal Insecticide, Fungicide and Rodenticide Act.

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Terpene hydrocarbons, phenols, and alcohols boiling at 175-250°C. are heated with sulfur or selenium to obtain dehydrogenated hydrocarbons, thiophenols, or condensates of sulfur or selenium. The product is mixed with an aqueous emulsion of an alkali salt of a terpene-acid oil boiling around 300°C., and is adsorbed with bentonite or talc. Anthracene or creosote oil is added and the mixture is powdered. Y. Inoue, Japanese Patent No. 174,976; through *Chem. Abs.*

Floor Sealers

By A. F. Bohnert*

Federal Varnish Div.

THE problems involved in sealing surfaces, whether a rubber tile office floor, a school gym floor or a plaster wall in some wash room are closely related. In each instance one desires not only to protect the base surface, but to produce a cleaner and healthier surrounding which may be maintained with the least effort and by the most economical methods. By sealing the surfaces not only is easier, more economical upkeep assured, but the area in which dirt may imbed itself is reduced as well. In order to discuss floor sealers more intelligently, it is possible to group them into four types, namely: I—Oleoresinous, II—Lacquers, III—Water emulsions and alkaline water solutions, IV—Non-drying.

The oleoresinous types of floor sealers are usually composed of low molecular weight mixtures which undergo a chemical change, after the evaporation of the solvent, and tend to form materials which are insoluble in the solvents of the original oleoresinous solution. They are composed of resins and drying oils, usually phenolic resins and tung oil, with possibly some additions of rosin esters and linseed, soya, or oiticica oils. The newly developed "Epon" materials are in this group. The chemical change is generally oxidation and polymerization of the oil. It progresses rapidly at first (most of it taking place between 1 and 10 hours) and then slowing down over a period of about 10 days, by which time the film has reached a nearly stable state. The film continues to change slowly over a period of time.

The lacquer types can be considered those which dry mainly by evaporation of solvents to produce films that remain permanently soluble in the original solvents which are present. Films of this type do not change essentially chemically during their entire lives. They are composed of substances of high molecular weight and contain resins such as nitrocellulose, ethyl cellulose, polystyrene, shellac, etc. They are plasticized with castor oil, blown linseed oil or chemicals such as tricresyl phosphate and dibutyl phthalate. Lacquer types include shellac and other resin solutions in organic solvents. They dry rapidly generally in between ¼ to one hour to a film which appears dry and hard. However, traces of solvents are retained in many of the films for hours and even days.

The third type includes emulsions and alkaline water solutions. Self-polishing waxes are part of this group. Solutions are composed of resins such as shellac, manila gum and various maleic and phenolic compounds. Emulsions are made from resins of many types and may or may not include waxes. The emulsions may also be made from materials included in types I and II, producing oleoresinous and lacquer emulsions.

Non-drying floor sealers are generally composed of mineral oils and waxes. Some contain blends of various vegetable oils such as linseed or soya bean oils in suitable solvents. Buffing waxes and floor oil dressings are included in this group.

The oleoresinous materials of Type I can be broken down into two classes: a) penetrating seals and b) surface seals. These may be further grouped into quick-drying (one to two hours), and conventional sealers which require 3 to 18 hours or longer to dry. Each type of sealer has certain advantages and disadvantages as with most materials it is impossible to build into any one product all the properties one desires.

Comparing the four types we find the following generally to be true: *Type I.* Oleoresinous sealers require longer drying times. Drying time can be shortened by the use of sealers with quick drying properties. Quick drying seals have less penetration than those that dry more slowly. When used as surface seals on gym floors they show more scuffing and rubber marking than the best surface seals of the conventional slower drying type. Oleoresinous type sealers have good penetration. They dry to a hard, tough finish which gives long wear. The only gym floor finishes which have consistently proven satisfactory have been of the oleoresinous type. They should never be used on mastic tile or rubber tile because the solvents present soften and disintegrate the tile. They should never be used on terrazzo or marble surfaces because of the danger of discoloration. Oleoresinous seals produce finishes which result in more discoloration, partly because of better penetration and partly on account of being composed of more amber materials.

Type II (lacquer sealers) have poor penetration and thus produce films which lay on the surface. In some instances they are more brittle, and tend to chip or peal, particularly if applied too heavily. The wear resistance of lacquer type seals is generally inferior to that of type I, thus requiring more frequent refinishing. They are not satisfactory for use on gym floors, as they rubber mark badly. Rubber becomes imbedded in the finish, making it almost impossible to keep clean. Some of these seals can be used on rubber tile, while other seals (those based on alcohol) can be used on mastic tile. Those seals which have been successfully used on terrazzo and marble are of this type. They are of light color and produce pale finishes which show very little discoloration. The low degree of penetration of lacquer type seals, particularly on wood surface, reduces discoloration. Whenever a finish is desired which will not change the original appearance of the surface, it is necessary to use a sealer of the lacquer type.

Type III sealers of the emulsions and alkaline water solutions varieties are sensitive to water spotting and easily removed with alkaline cleaners. They can not be used on wood unless applied as a temporary finish over another type of sealer. They can be

* Paper presented before the 36th annual meeting N.A.I.D.M., Washington, D. C., Dec. 5.

used to seal and finish rubber and mastic tile. Generally speaking, sealers and finishes of Type III are not permanent.

Non-drying seals (Type IV) can be used only as a sealer on surfaces which are completely porous. During their application it is necessary to remove all excess seal and then buff to produce a usable surface. Non-drying seals have the deepest penetration which produces the greatest darkening. A floor sealed and maintained with a Type IV product soon becomes dark and unsightly as a result of dirt being ground into the pores and mixed with the non-drying oils. Some materials of this type can be used over other sealers to clean and maintain them—an application that has represented the largest outlet for non-drying floor seals in recent years. The floor oils and dressings of years ago are of the non-drying type.

NO paper on floor seals would be complete without some discussion of the preparation of the surface to which the floor sealer is to be applied. Most floor finishing failures are due to poor surface preparation and material application. It is not the intent of this paper to discuss thoroughly the finishing of various floor surfaces but merely to point out the important steps necessary to do a job that will not only satisfy the customer but will be a source of pride to the manufacturer of the material.

The first step in producing a satisfactory job is the preparation of the surface which includes sanding for a completely new finish or cleaning for a refinishing. Good cleaning agents and equipment are absolutely essential.

The following are some of the more common methods used to clean and prepare surfaces for finishing, taking into consideration the type of floor and its condition.

Sanding is preferred whenever possible. If no sanding equipment is available a paint and varnish remover can be used for finishes of the oleoresinous type. Lacquer thinner will remove lacquers, and alcohol is effective for shellac or manila gum. If the finish has been removed by any method other than sanding, the surface should be scrubbed with an alkaline cleaner, then neutralized and rinsed. After drying it should be buffed with steel wool.

Floor oils, petroleum base sealers, grease, and oil base buffing waxes are most easily removed by wiping first with a rag soaked in naphtha or turpentine. The surface should then be scrubbed with an alkaline cleaner, neutralized and rinsed. After drying, it should be buffed with steel wool. An alkaline cleaner in hot water will remove water base self-polishing waxes.

Wood or cork tile floors which have been sealed and maintained with non-drying materials such as floor oils and buffing waxes, or end grain floors such as blox-on-end, which were impregnated with paraffine wax, must be deep sanded before sealing with an oleoresinous or lacquer type sealer. Concrete and other cement containing floors, which may have absorbed oils or greases, must not only be scrubbed but probably will require a trisodium phosphate poultice to saponify or emulsify the deeply penetrated oils and greases.

It is not advisable to use an oleoresinous type sealer over lacquer, shellac or other lacquer type sealers. The reverse is also true. Do not use lacquer or shellac sealers over an oleoresinous type seal. It is always necessary to apply thin even coats. Do not try to make one coat do when two coats are required.

The following are some of the more common conditions causing the majority of problems on various floor surfaces. We will consider each type of floor separately.

Wood: On new or newly sanded surfaces a poor sanding job will produce a finish with ridges and gouges. If the surface is not steel wooled after the first coat is applied, a rough and sandy finish will result, due to uneven penetration and grain raising. This condition causes excessive scuffing, rapid wear and, in the case of a gym floor, very bad rubber burning. Wherever oil, grease or soap remains on old surfaces to be refinished, drying troubles result and are almost always followed by peeling and poor film properties. This condition is exaggerated by heavy application of sealing material.

Cork Tile: Problems similar to those presented by wood surfaces are encountered with cork tile. For example, sanding must be done with care. It is also advisable to buff with steel wool between coats.

Linoleum: New linoleum, such as battleship and inlaid, is generally coated with a wax finish by the manufacturer. Most of these surfaces are maintained with either a self-polishing water wax or an oil-base buffing wax. Old or new linoleum on which a wax finish is not wanted may be protected with an oleoresinous or lacquer seal. A penetrating oleoresinous type sealer is preferred, since by penetration it can actually become part of the linoleum surface. Great care must be taken to remove all waxes, oils, or soap, the presence of which will prevent penetration and thus cause poor drying and possibly peeling. Spotting the surface with water will indicate whether or not it is clean. The water tends to puddle on an oily surface, whereas on a clean surface it spreads.

Rubber Tile: New surfaces should be maintained with self polishing water waxes. Oleoresinous type sealers, oil sealers or oil cleaners should never be used on rubber floors. Old surfaces which have become porous

(*Turn to Page* 145)

The four principal types of sealers are reviewed as to composition and uses. Methods of applications are outlined for various floor surfaces.

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USDA Issues Pesticide Labeling Rules

AN interpretation of the provision in the Federal Insecticide, Fungicide and Rodenticide Act covering minimum warning or caution statements and antidotes on labels of products containing one or more of a list of 71 active ingredients was issued Nov. 18 by the U. S. Department of Agriculture. The chemicals listed in the interpretation, which is designated as "Interpretation No. 18", are classified into one of the following four groups:

1.) High toxic products which require the word "poison", the skull and cross-bones and an antidote statement including directions to call a physician, and a warning statement.

2.) Those products which fall in a class immediately below the highly toxic and in general include formulations having a toxicity down to one-tenth of the highly toxic class. The label of this class does not require the skull and cross-bones but does require a warning statement.

3.) This group embraces products having hazards below class 2 but to a degree which still requires some caution and usually includes toxicities down to about one-tenth of those in class 2. This class requires a caution statement.

4.) The fourth class is comparatively free from danger.

In the suggested caution statements listed below, the exact wording is not compulsory, but the substance of all such statements is required, unless under special conditions of handling or use, it is unnecessary. The notation "H.P." indicates that the warning is required only on packages commonly stored or used in the household where there is greater danger of accidents involving children or pets. The notation "A Poison" always refers to the skull and cross-bones and the word poison in red. The first hazard caution prescribed in each case is based on the flash point of the chemical named. The minimum labeling needed to bring specified formulations into compliance with the warning, caution and antidote requirements of the act is as follows:

(3) Alphanaphthylthiourea (ANTU) —30 per cent and above.

Antidote: Give a tablespoon of salt in a glass of warm water and repeat until vomit fluid is clear. Have victim lie down and keep quiet. Call a Physician Immediately!

Warning: Keep dogs, cats, hogs and chickens away from baited areas.

Below 30 per cent.

Warning: Keep away from children and domestic animals. Avoid contamination of feed and foodstuffs.

(9) Benzene hexachloride (hexachlorocyclohexane, "666", "Gammexane")—

BHC and dry formulations 25 per cent and above.

Warning: Harmful Vapor and Dust! May Be Absorbed Through Skin! May Produce Irritation of Skin and Eyes! Avoid prolonged breathing of vapor, dust or spray mist. Do not leave in eyes or on skin. Wash thoroughly. Avoid contamination of feed and foodstuffs.

BHC and dry formulations below 25 per cent.

Caution: Avoid prolonged breathing of vapor, dust or spray mist. Do not leave in eyes or on skin. Wash thoroughly. Avoid contamination of feed and foodstuffs.

Solutions and emulsions of BHC.

Since various solvents which differ in toxic properties may be used, labels should bear the precautionary statements covering the combined hazards of BHC and the solvent.

Gamma isomer (99 per cent and above) and formulations containing only gamma isomer.

Use the appropriate statements as indicated in other subdivisions of this sub-paragraph, except the caution of "May produce irritation of skin and eyes" will not be required.

(15) Chlordane.

Treat as DDT.

(19) Coaltar disinfectants.

Treat on the basis of percentage of phenols.

(23) Dichlorodiphenyldichloroethane (DDD-TDE-Rhothane D3).

Treat as DDT.

(24) Dichlorodiphenyltrichloroethane —for straight DDT.

Caution: DDT is toxic and when in solution can be absorbed through the skin. Harmful if swallowed. Avoid inhaling dusts and mist from spray. Avoid contamination of feed and foodstuffs.

Petroleum oil solutions containing not more than 25 per cent DDT.

Caution: Repeated or prolonged contact with skin can cause toxic symptoms. Avoid excessive inhalation or skin contact. In case of spillage on skin, wash with soap and water. Avoid contamination of feed and foodstuffs. Harmful if swallowed. (H.P.) Keep out of the reach of children. (H.P.)

For petroleum oil solutions containing more than 25 per cent DDT.

Caution: Contact with skin can cause toxic symptoms. Avoid inhalation and skin contact. In case of spillage on skin, wash immediately with soap and water. Avoid contamination of feed and foodstuffs. Do not use on household pets or humans. Harmful if swallowed. (H. P.) Keep out of reach of children. (H. P.).

For emulsions containing not more than 25 per cent DDT.

Caution: Repeated or prolonged contact with skin can cause toxic symptoms. Avoid excessive inhalation or skin contact. In case of spillage on skin, wash with soap and water. Avoid contamination of feed and foodstuffs. Harmful if swallowed. (H.P.) Keep out of the reach of children. (H.P.)

For emulsions containing more than 25 per cent DDT.

Caution: Contact with skin can cause toxic symptoms. Avoid inhalation and skin contact. In case of spillage on skin, wash immediately with soap and water. Avoid contamination of feed and foodstuffs. Do not use on household pets or humans. Harmful if swallowed. (H. P.) Keep out of reach of children. (H.P.)

For combustible mixtures; flash point between 80° and 150° F.

Use the appropriate statements as indicated in other subdivisions of this subparagraph and add:

Fire hazard: Caution—Do not spray into or near fire or open flame. Do not smoke while spraying.

For dust and powder formulations.

Caution: Avoid excessive inhalation. Avoid contamination of feed and foodstuffs.

DDT aerosols.

Caution: DDT is toxic and when in solution can be absorbed through skin. Do not spray directly on skin or on animals. In case of accidental contact, wash with soap and water. Avoid contamination of feed and foodstuffs. Remove birds, pets and fish bowls from rooms being

sprayed. Avoid excessive inhalation of aerosol mist.

DDT for use on animals.

Caution: DDT is toxic and when in solution can be absorbed through the skin. Wash hands thoroughly with soap and warm water after handling the concentrate or using the diluted product on animals.

Note: If the preparation contains other hazardous ingredients or solvents, appropriate additional cautions must be added to the foregoing.

(36) Hypochlorites (sodium and potassium hypochlorite solutions)—10 per cent and above.

Caution: Harmful if Swallowed!

Note: Hypochlorous acid, either free or combined and any preparation containing the same in a concentration so as to yield 10 per cent or more by weight of available chlorine, excluding calx chlorinata bleaching powder and chloride of lime, are subject to the provisions of the Federal caustic poisons act, and labels for containers "suitable for household use" should comply with those provisions. When so labeled the products will be marked acceptably under the Federal insecticide, fungicide and rodenticide act.

(38) Kerosene sprays (or similar formulations containing other petroleum distillates)—When sold for household use.

Caution: Harmful if Swallowed! Keep out of reach of children.

Fire hazard: Do not use or store near heat or open flame.

When recommended for use on animals.

Caution: Avoid wetting the hides of animals.

Fire hazard: Do not use or store near heat or open flame.

(46) Paints, containing DDT, DDD, chlordane, BHC or toxaphene.

Treat as oil solutions or emulsions.

(51) Pine oil disinfectants.

No requirements unless other ingredients in the formulation require it.

(53) Pyrethrum.

No requirements unless other ingredients in the formulation require it.

(55) Quaternary ammonium salts—2 per cent and above alkyl (C_8H_{17}—$C_{18}H_{37}$) dimethyl benzyl ammonium chloride, alkyl trimethyl ammonium bromide and allied substances.

Caution: Avoid contamination of food.

Formulations having hazards requiring more caution statements.

Quaternary formulations having hazards requiring more caution statements than those indicated in other subdivision of this subparagraph must be considered individually.

(56) Red squill powder and extracts; any effective concentrations.

Caution: Avoid contamination of feed and foodstuffs. (H.P.) Keep away from children and domestic animals.

(57) Sabadilla powder.

Caution: Avoid breathing dust.

(59) Sodium fluoroacetate (1080); any concentration.

X POISON

Antidote: *Internal*—Speed is essential. Immediately give a tablespoonful of salt in a glass of water and repeat until vomit fluid is clear. Then give two tablespoonfuls of epsom salt in water Have victim lie down and keep warm and quiet. Call a Physician Immediately!

Warning: For Use By Trained Operators Only! May cause secondary poisoning in other animals, so pick up and burn or bury deeply, all carcasses of pests killed by 1080. Burn all surplus bait or bait containers. Keep pets and domestic animals confined away from baited areas. Do not contaminate feed and foodstuffs. Keep out of reach of children.

(64) Thallium compounds—1 per cent and above.

X POISON

Antidote: Give a tablespoon of salt in a glass of warm water and repeat until vomit fluid is clear. Have victim lie down and keep warm. Call A Physician Immediately!

Warning: Cumulative Poison! Absorbed through the skin. Do not get in eyes, on skin or on clothing. Wash thoroughly. Keep children and domestic animals away from baited areas and burn all pests killed.

Below 1 per cent.

Warning: May Be Fatal If Swallowed Or Absorbed Through Skin! Do not get in eyes, on skin or on clothing. Wash thoroughly. Do not contaminate feed and foodstuffs. Keep children and domestic animals away from baited areas and burn all pests killed.

(70) Zinc phosphide—10 per cent and above.

X POISON

Antidote: Give a tablespoon of salt in a glass of warm water and repeat until vomit liquid is clear. Have victim lie down and keep warm. Call a Physician Immediately!

Warning: Do not breathe dust or fumes. Do not contaminate feed or foodstuffs. Keep away from children and domestic animals.

Two per cent to 10 per cent.

Warning: May Be Fatal if Swallowed! Do not breathe dust or fumes. Do not contaminate feed and foodstuffs. Keep away from children and domestic animals.

Below 2 per cent.

Caution: Harmful if Swallowed! Avoid contamination of feed and foodstuffs. (H.P.) Keep away from children and domestic animals.

(71) Zinc salts—not elsewhere included—(considered as zinc, not as anions)—5 per cent and above.

Caution: Harmful if Swallowed!

In addition to the materials above, the following appeared on the Department of Agriculture's list:

Acetone, (50 per cent and over), acrylonitrile, barium carbonate (10 per cent and over), benzene (15 per cent and over), carbon disulphide (90 per cent and over), carbon tetrachloride (10 per cent and over), chloroform (10 per cent and over), chloropicrin (any effective concentration), coaltar creosote (containing less than five per cent phenols), borax and boric acid (20 per cent and over), cadmium formulations (to be considered on the merits of each formulation, if found "highly toxic" under the act), calcium cyanamid (25 per cent and above), cyanide (calcium cyanide (five per cent and over), dichloroethyl ether (10 per cent and over), 2, 4-dichlorophenoxyacetic acid (2, 4-D)—acid and inorganic salts (20 per cent and over), dinitro ortho cresol (10 per cent and over), di-(p-chlorophenyl) methyl carbinol (25 per cent and over), ethyl bromide (10 per cent and over), ethylene dibromide (10 per cent and over), ethylene dichloride (10 per cent and over), ferric dimethyl, dithiocarbamate (any effective concentration), fluorides (inorganic, water soluble fluorides 10 per cent and over), formaldehyde solutions (four per cent and over), hydrochloric acid (10 per cent and over as hydrogen chloride), isopropylphenyl carbamate (IPC) (50 per cent and over), mercury compounds (inorganic salts, except calomel (20 per cent and over), based on percentage of elemental mercury present), mercury metallic (in ointments, two per cent), methyl bromide, methylene chloride, nicotine and its salts (five per cent and over), nitrobenzene (oil of mirbane, 25 per cent and over), orthodichlorobenzene (10 per cent and over), pentachlorophenol (except oil solutions or emulsions, five per cent and over), phenols (including phenols, cresols, cresylic acid, 10 per cent and over), phosphorus (white or yellow, one per cent and over), parathion (technical parathion and wettable powders, two per cent and over), piperonyl butoxide, pyridine (25 per cent and over), selenites and selenates (three per cent and over), sodium o-phenyl phenate, strychnine and its salts, tetraethyl pyrophosphate (one per cent and over), tetramethylthiuramdisulfide (20 per cent and over), thiocyanates (B-butoxy, B'thiocyano diethyl ether (25 per cent concentration), toxaphene (chlorinated camphene, dry formulations—25 per cent and over), 2, 4, 5-trichlorophenoxyacetic acid (salts, 20 per cent and over), zinc dimethyl dithiocarbamate (any effective concentration, zinc ethylene disdithiocarbamate (10 per cent and over).

Complete copies of the interpretation are available from the insecticide branch, Bureau of Entomology and Plant Quarantine, U. S. Department of Agricu'ture, Washington, D. C.

N.A.I.D.M. Meets, Becomes C.S.M.A.

Chemical Specialties Manufacturers Assn. is new name for NAIDM. Five divisions set up as part of reorganization program to meet separately. Chairmen to be elected.

USE of the new name, Chemical Specialties Manufacturers Association, began officially at the 36th annual meeting of what was formerly the National Association of Insecticide & Disinfectant Manufacturers, being held at the Mayflower Hotel, Washington, D. C., Monday and Tuesday, Dec. 5 and 6. The adoption of the new name and other changes in the structure of N.A.I.D.M. were voted by the membership at the 35th mid-year meeting in Chicago, last June. Other association business actions taken at the meeting include the election of officers and chairmen of the five sections set up within the organization. Division or section chairmen become members of the association's board of governors.

The program for the meeting, like that of the mid-year gathering in June, is one of the most comprehensive ever arranged by the association. Approximately 48 papers are being given. Besides general discussion sessions on the first morning, Monday, Dec. 5 and on Tuesday afternoon, Dec. 6, the closing session, five divisional meetings are being held, beginning at 1:45 p.m. Monday afternoon, Dec. 5 and resuming the following morning. Specialized discussions covering formulation, manufacturing and marketing problems on new and standard items are being presented at meetings of the following five divisions of the association: aerosol; disinfectant and sanitizers; insecticide; soaps, detergents and sanitary chemicals products; waxes and floor finishes. Association business, including the reports of the president and secretary, is scheduled for consideration at the two general sessions.

Social events arranged for the meeting include group luncheons on both days, a gin rummy tournament on the first night, and the cocktail party, informal dinner and floor show on Tuesday evening, which concludes the meeting. A meeting and dinner of the board of governors was held Sunday afternoon and evening, Dec. 4, and chairmen of the committees which met Sunday afternoon attended the dinner of the board. An innovation at this meeting was a get together Sunday night of soap makers in the association.

In addition to five simultaneous sessions of the association's divisions, held on Monday afternoon, on the following morning there are two divisional meetings scheduled, one of which is a joint session of the soaps, detergents and sanitary chemical products group and the waxes and floor finishes division. The insecticide division was to meet separately, the aerosol and disinfectant and sanitizers groups not being scheduled, unless it was necessary to wind up any unfinished business from the previous afternoon. A symposium discussion of proposed changes in Specification 784 of the Bureau of Federal Supply, U. S. Treasury Department, Washington, D. C. on water emulsion, slip retardant floor wax was to be held on Monday night, Dec. 5. The specification, a proposed revision of which appeared recently as Specification 784a, is expected eventually to replace Federal Specification PW-151a, water emulsion type floor wax.

An all-day trip to the research center of the U. S. Department of Agriculture at Beltsville, Md., has been

GORDON M. BAIRD, President

H. W. HAMILTON, Secretary

MELVIN FULD, Program Chairman

planned for Wednesday, December 7.

The meeting opened Monday morning, Dec. 5, with Gordon M. Baird of Baird & McGuire, Inc., Holbrook, Mass., N.A.I.D.M. president, presiding. Following introductory remarks of welcome he read his report as president. He reviewed the activities of the past year and discussed the reorganization of the association. Mr. Baird observed that some members of the industry do not take time to test their products fully, and this tendency to rush products to market without adequate testing often entails disastrous results for the entire industry. The reorganized association has a fine opportunity, he suggested, to stamp out such practices. With the new group set-up, he emphasized, there will be ample opportunity to bring up such subjects for group discussion and action at the divisional meetings.

H. W. Hamilton of H. W. Hamilton Co., New York, secretary of the NAIDM, followed with his report in which he pointed out that the "regrouping or reorganization is not the creation of a new trade association . . . but a step to permit a greater, more fundamental concentration on the progress and problems of each specialty group within the association." Mr. Hamilton also mentioned a survey being undertaken by the association on the subject of fees collected for registration under the Insecticide and Fungicide Acts. He said that in 22 states having registration fees $212,314 was collected in 1948. If every state had such fees that total would come to about $470,000, according to Mr. Hamilton. He urged manufacturers to fight state registration fees, and mentioned a proposed questionnaire being sent out to determine the cost of filing registrations, exclusive of fees.

Following appointment of committees, and the election of a nominating committee, William T. Ingram, associate professor of Public Health

Program for 36th Annual Meeting NAIDM

Monday Afternoon — December 5th

Starting time of all meetings is 1:45 P.M.

Aerosol Division

Paper Number	Time	
		Election of Division Officers.
A-1	2:00 P.M.	"Aerosols—A Boom Industry—Let's Not Ruin It"—H. E. Peterson, Continental Filling Corp.
A-2	2:30 P.M.	"ICC and The Aerosol Industry"—H. A. Campbell, Chief Inspector, Bureau of Explosives, New York City.
A-3	3:00 P.M.	"Packaging of Foam Products in Pressurized Containers" — W. E. Graham, Director of Research, Crown Can Company.
A-4	3:30 P.M.	"Triethylene Glycol in Aerosol Bombs" —E. G. Young, Kinetic Chemicals.
A-5	4:00 P.M.	"Deodorant Test Methods"—Anthony Haas, Kilgore Laboratories.
A-6	4:30 P.M.	"Sale of T.O.T.A. Bombs"—A. C. Miller, Gulf Research and Development Corp.

Disinfectant and Sanitizers Division

Paper Number	Time	
		Election of Division Officers.
D-1	2:00 P.M.	"Synthetic Phenolics in Pine Type Disinfectants"—Paul A. Wolf, Biochemical Research Department, Dow Chemical Company.
D-2	2:30 P.M.	"Important Toxicological Properties"—Herman A. Shelanski, Industrial Toxicology Laboratories.
D-3	3:00 P.M.	"Industrial Sanitation"—John M. Stewart, Applied Research Laboratories, Armour & Co.
D-4	3:30 P.M.	"Some Phases of Development of the Quaternary Ammonium Field"—W. L. Mallman, Professor of Bacteriology and Public Health, Michigan State College.
D-5	4:00 P.M.	"Medical Aspects of Glycol Vaporizers" —Irvin Kerlan, M. D., Acting Medical Director, Food and Drug Administration, Washington, D. C.
D-6	4:30 P.M.	"Experiences in Testing Commercial Quaternary Ammonium Germicides" L. S. Stuart, John Bogusky and J. L. Friedl, Bacterial Section, Insecticide Division, U. S. Department of Agriculture. Presented by L. S. Stuart.
D-7	5:00 P.M.	"Swimming Pool Sanitation"—William J. Cary, Director, Bureau of Public Health Engineering, Office of Health Department, District of Columbia.

Insecticide Division

Election of Division Officers

Paper Number	Time	
I-1	2:00 P.M.	"Importance of Essential Oils and Aromatics to the Insecticide Industry"—Arthur H. Downey, Technical Director, Magnus, Mabee & Reynard, Inc.
I-2	2:30 P.M.	"Modern Trends in Insect Control in the Food Industry"—Charles A. Clark, Staff Assistant for Sanitation, General Foods Corporation.
I-3	3:00 P.M.	"Exploration for New Insecticidal Chemicals"—M. D. Farrar, Head, Department of Entomology and Zoology, Clemson Agricultural College.
I-4	3:30 P.M.	"Insect Taste Repellents"—S. S. Block, Assistant Research Engineer, Engineering and Experiment Station, University of Florida.
I-5	4:00 P.M.	"Hydrogenated Rotenone"—H. E. Whitmire, Whitmire Research Laboratories, Inc.
I-6	4:30 P.M.	"A Preliminary Study of the Raticidal Potentialities of 3-(1 phenyl-2 acetylethyl)-4 hydroxycoumarin (W.A. R. F. Compound No. 42)"—D. Glen Crabtree, Fish and Wildlife Service, U. S. Department of Interior, Denver, Col.
I-7	5 P.M.	"Discovery of Rodenticide W.A.R.F.-42" —Karl Paul Link, Professor of Biochemistry, University of Wisconsin.

Soap, Detergent, and Sanitary Chemicals Division

Election of Division Officers

Paper Number	Time	
S-1	2:00 P.M.	"Use of Chelating Agents in Liquid Potash Soaps"—John J. Singer, Chief Chemist, Bersworth Chemical Co.
S-2	2:30 P.M.	"Plastic Coatings for Chemical Process Equipment"—Howard C. Woodruff, Coating Materials Engineer, Corrosite Corporation.
S-3	3:00 P.M.	"The Surface Active Fatty Amides"—H. W. Zussman, Alrose Chemical Company.
S-4	3:30 P.M.	"Test Methods for Evaluation of Rug Cleaning Materials"—E. A. Leonard, Assistant Chief, Product Engineering Laboratories, Alexander Smith & Sons.
S-5	4:00 P.M.	"The Bug in the Rug"—Edward Salas, Advertising Manager, Nuodex Products, Inc.

S-6	4:30 P.M.	"Effect of Various Fatty Acids on the Viscosity of Potash Liquid Soaps"—W. G. McLeod, Director of Research, W. C. Hardesty Company.

Waxes and Floor Finishes Division
3:00 P.M.

Paper Number	Time	
		Election of Division Officers
W-1	3:00 P.M.	"Oil Soluble Resins"—Herbert J. Mellan, Durez Plastics & Chemicals, Inc.
W-2	3:30 P.M.	"Testing of Water Resistance and Removability of Floor Waxes"—Bayard S. Johnson, Manager, Industrial Div., Franklin Research Corp.
W-3	4:00 P.M.	"Gloss Measurement of Self-Polishing Waxes"—Richard S. Hunter, Chief Optical Engineer, Henry A. Gardner Laboratory, Inc.
W-4	4:30 P.M.	"Psycho-physical Aspects of Gloss"—Daniel Smith, Interchemical Corporation.

Monday Evening
8:00 P.M.

W-5		Symposium on Proposed Changes in Federal Specification PW-151a: Wax, Floor; Water Emulsion. Melvin Fuld, Moderator.

Tuesday Morning — December 6th

Insecticide Division
9:00 A.M.

Paper Number	Time	
I-8	9:00 A.M.	"Effectiveness Against House Flies, Mosquitoes and American Cockroaches of Aerosols Containing Synthetic Pyrethrin-type Ester"—by J. A. Fales, R. H. Nelson, R. A. Fulton and O. F. Bodenstein, U. S. Department of Agriculture, Bureau of Entomology & Plant Quarantine, Beltsville, Md. Presented by J. A. Fales.
I-9	9:30 A.M.	"Synthetic Pyrethrins"—S. A. Rohwer, Assistant Chief, Bureau of Entomology & Plant Quarantine, Agricultural Research Administration, U. S. Department of Agriculture.
I-10	10:00 A.M.	"Current Moth-Proofing Solutions"—L. S. Henderson, Bureau of Entomology & Plant Quarantine, U. S. Department of Agriculture.
I-11	10:30 A.M.	"Cattle Sprays"—E. F. Knipling, In Charge, Division of Insects Affecting Man and Animals, Bureau of Entomology & Plant Quarantine, U. S. Department of Agriculture.
I-12	11:00 A.M.	"Relation of Insects to the Spread of Human and Animal Diseases"—F. C. Bishopp, Assistant Chief, Bureau of Entomology & Plant Quarantine, Agricultural Research Administration, U. S. Department of Agriculture.
I-13	11:30 A.M.	"The Acquisition, Retention and Specificity of Insecticidal Tolerance by the House Fly and Some Other Insects"—W. N. Bruce, University of Illinois, Urbana, Ill.

Joint Session
Soap, Detergent and Sanitary Chemicals Division
and
Waxes and Floor Finishes Division
9:00 A.M.

Paper Number	Time	
S-W 1	9:00 A.M.	"Maintenance of Felt Base Linoleum, Plastic Floors and Wall Linoleum"—R. K. Austin, Congoleum-Nairn, Inc.
S-W 2	9:30 A.M.	"Maintenance of Asphalt Tile Floors"—Julian O. Heppes, Tile-Tex Division, The Flintkote Company.
S-W 3	10:00 A.M.	"Home Floor Problems"—Mrs. Blanche Kuschke, School of Home Economics, Rhode Island State College.
S-W 4	10:30 A.M.	"Maintenance of Floors by Machine Methods"—J. Sassano, President, General Floorcraft, Inc.
S-W 5	11:00 A.M.	"Sealers for Floors"—A. F. Bohnert, Technical Director, Federal Varnish Div. of Enterprise Paint Mfg. Co.
S-W 6	11:30 A.M.	Scrubbers, Detergents and Cleaners for Use on Soft Floors"—Ralph B. Trusler, Davies-Young Soap Co.
S-W 7	12:00 Noon	"Application by Mop of Self-Polishing Waxes"—F. J. Pollnow, Jr., Vestal, Inc.

Tuesday Afternoon — December 6th

General Session
2:00 P.M.

Paper Number	Time	
G-5	2:00 P.M.	Report of Nominating Committee.
G-6	2:15 P.M.	Election of Officers.
G-7	2:30 P.M.	"Application of the Federal Food, Drug and Cosmetic Act to Sanitary Chemicals"—John L. Harvey, Director, Regulatory Management, Food and Drug Administration, Washington, D. C.
G-8	3:00 P.M.	"Developing and Selling New Products in the Sanitary Chemical Field"—Gustav E. Larson, Marketing Division, Office Domestic Commerce, U. S. Department of Commerce.
G-9	3:30 P.M.	"Air Transportation for Salesmen and Air Freight and Express"—Walter Johnson, Regional Vice Pres., American Air Lines, New York.
G-10	4:00 P.M.	Report of Resolutions Committee. Unfinished Business. Adjournment

Tuesday Evening

6:00 P.M.	Cocktail Party—Sapphire Room.
7:30 P.M.	Informal Dinner and Floor Show—Sapphire Room.

Engineering, New York University, and editorial director of *Modern Sanitation* magazine, discussed "Sanitation Products, an Undeveloped Market." Mr. Ingram outlined some of the sanitary practices obtaining in industry and compared sanitation in the community to sanitation in industry.

The concluding speaker of the first morning's session was J. L. Brenn, president of Huntington (Ind.) Laboratories, Inc., whose topic was "Personal Observations of Conditions in Western Europe from the Standpoint of an American Business Man."

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PART II

AERIAL contamination was determined once a week during maximum activity periods by means of one hour settling plates and bubbler samples. The settling plate counts were substantially identical while the bubbler samples in the glycolized ward showed an appreciable reduction in bacterial counts.

The data covering approximately 2,200 patient days obtained in each of the wards thus far indicate a substantial reduction in cross-infections although relatively few cross-infections occurred. The study is incomplete and the data have not been statistically analyzed. Drs. Krugman and Ward are planning to continue their tests this winter and they feel that the data obtained so far are encouraging although not conclusive.

Test chamber studies conducted by Dr. Krugman indicate both mumps virus (25) and H. *pertussis* (35) the pathogen causing whooping cough, are susceptible to inactivation by glycol vapor when they are suspended as droplet nuclei in the air.

Commercial Installations

SEAMEN'S BANK: The Seamen's Bank for Savings, New York, has been using triethylene glycol since 1939 and consider it of such value that its use has been recently extended to their midtown branch. Bacteria counts are taken at monthly intervals and these tests show that the number of air-borne bacteria are reduced in the glycolized areas. The bank's physicians recommend glycol vapor continued to be used and that regular determinations be made of bacteria counts and glycol vapor concentrations. The absenteeism rate at the Seamen's Bank has been close to two per cent consistently for many years. The physicians feel that this low absenteeism rate is due to several factors in addition to the use of glycol vapor such as free lunches and medical examinations, free medical and group insurance and at least two weeks vacation in the summer and a one week vacation in the winter (26, 51).

Bristol - Myers: Bristol - Myers Co., New York, has been using glycol vapor in the finishing department of their Hillside, N. J. plant. The department is completely air conditioned and ultra violet lights have been used to treat the air supply for one-half of the area. In December, 1948, Air Purification Service vaporization equipment was added to treat the entire department. Absenteeism data given below show a marked decrease in absences due to colds in January, February and April, 1949, over previous years.

	Jan.	*Feb.*	*Mar.*	*Apr.*	*Dec.*
	days	*days*	*days*	*days*	*days*
1947	43	31½	54½	46½	39¼
1948	29	37½	58½	52	40
1949	25¼	21¾	64	21½	

An increase in the number of colds is evident in March, 1949, at which time the air conditioning systems were shut down for repairs, thereby preventing the use of the glycol vaporizers. Influenza and cold vaccines were made available to all employees and the records indicate that approximately 50 per cent of the employees absent due to colds had taken the immunization treatment. The use of glycol vapor also reduced the algae and odor problems in the air conditioning system. W. F. Schultze does not feel that they have yet accumulated conclusive evidence, but is confident that glycol vapor has proven beneficial. He is planning to obtain additional data (27).

Philip Morris: Philip Morris and Company, Ltd., New York, first distributed glycol vapor this past winter (1948-1949) through the air conditioning systems. R. W. Norris, personnel director, advises that both Dr. Wingfield, the company doctor and their medical departments found "there was a considerable reduction in respiratory infections reported to the first aid stations."

Suffolk Savings Bank: The Suffolk Savings Bank in Boston reports 56 days lost through sickness between December 1, 1947, and April 1, 1948. Glycol vapor was used this past winter during which 29 days were lost (28).

J. L. Hudson Company: J. L. Hudson Co., a department store in Detroit, has experimented with glycol vapor in its telephone switchboard room for the past nine months and on the basis of the results obtained recently made additional installations on the 17th, 18th and 19th floors of its building. No unfavorable employee reaction has occurred and while absences due to colds have been reduced, it is stated that conclusive data has not yet been accumulated (29).

Carbide and Carbon: Triethylene glycol is being used as an anti-bacterial agent and to dehumidify air in four sections of the New York offices of the Union Carbide and Carbon Corporation. Glycol is also being used to sanitize the air in offices on the fourth floor of 292 Madison Avenue.

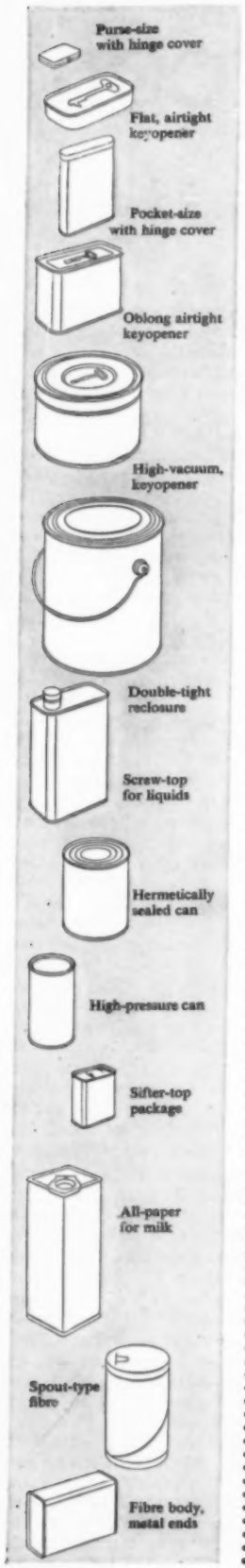
It does not appear feasible to collect accurate absenteeism data because of the lack of suitable "control" areas similar to the "test" areas. While the primary purpose in running the tests was to ascertain whether the glycol vapor installations were operating properly, the settling plate counts also served to indicate the effect of glycol vapor on the bacterial population of the air. The vaporization equipment has operated satisfactorily with very little attention or maintenance. Approximately 220 settling plates were used during the test period beginning in December, 1946 and ending in May, 1948. Exposure was for twenty minutes at face height in petri dishes containing sterile "Difco" Nutrient Agar Base. Sterility was checked by a 48 hour incubation before exposure. Colony counts were made after a 48 hour incubation at 98.6°F. following exposure. All of the areas in which bacteria counts were taken are provided with a filtered air supply. The majority of the organisms found were non-pathogens such as *Staphylococcus albus, Sarcina lutea* and *Bacillus subtilis. Streptococci* were occasionally found during the winter months.

The average number of bacteria colonies found per twenty minute plate in the glycolized area was 3.3. In somewhat similar non-treated areas, the average colony count found was 10.0, indicating an average reduction in bacteria count of 67 per cent in the glycolized areas. No effect was noticeable on the mold counts.

The average count found on the first and mezzanine floors of 11 East 41st Street beween October, 1947 and May, 1948 was 4.2. During the same period, the average count found on the third floor where glycol is not used was 8.1. Data taken at 292 Madison Avenue, on the fourth floor, shows a bacteria count of 14.1 before the use of glycol vapor and 5.7 after use. During a very brief and preliminary test, no reduction in bacteria or mold counts was noticeable from the use of an oiling procedure to control dust.

Merck and Johnson and Johnson: Merck and Co. are continuing to use triethylene glycol vapor in their streptomycin plant in Rahway and Johnson and Johnson in New Brunswick report that tests are continuing in their offices al-

* Paper given before 35th mid-year meeting, N.A.I.D.M., Chicago, June 14, 1949.



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though no conclusive data have been obtained (30).

Theatres: Bacteria counts taken by Air Purification Service, Inc. (31) in the Rivoli Theater in New York and a theatre in Texas and by the Magner Sales Company (32) in the Richfield Theatre in Minneapolis, show reductions in bacteria counts between 42 and 83 per cent after the use of glycol vapor.

Animal and Poultry Farms

CARWORTH FARMS: Carworth Farms, New City, Rockland County, New York, have been using glycol vapor for several years in their mice, rat and guinea pig houses. Data obtained from C. W. Cumming through the courtesy of S. Coey of Air Purification Service, Inc. show that in 1946, which was a normal year, 10.95 per cent of the mice were lost. In 1947, during which a severe epidemic occurred, 18.9 per cent of the mice were lost and in some months, losses were as high as 50 per cent. Early in 1948, glycol vapor units were installed in the mouse house and in that year only 5.4 per cent of the mice were lost. In 1947, an epidemic of pneumonia (Type 8) was causing serious losses in the guinea pig house. After the installation of a glycol vaporizer, the death losses decreased quite markedly. A vaporizer was placed in the rat house in 1948 during an epidemic again with positive results. Mr. Cumming has concluded that glycol vapor has helped in reducing his employee absenteeism, as well as aiding in the reduction of animal losses.

University of Connecticut: Dr. E. Jungherr, Pathologist of the University of Connecticut's Department of Animal Diseases has also been using glycol vapor for five to six years in animal rooms to prevent the spread of virus diseases from cage to cage or room to room. Dr. Jungherr states that they have found glycol vapor will keep respiratory tract air-borne virus diseases isolated more satisfactorily than is possible in rooms without vaporizers. While no systematic experiments with glycol vapor have been conducted, Dr. Jungherr feels that it would probably be of value in poultry houses (33).

Air Engineering, Inc.: L. A. Sauer of Air Engineering, Inc. and Dr. K. B. DeOme, animal pathologist of the University of California, have cooperated in running tests on the use of glycol vapor in chicken brooder houses (34). Both the test and control houses measured 100 x 20 x 8 feet and were of the conventional type, completely enclosed. Air was forced into each building by means of a variable output 6,000 C.F.M. blower and distributed through the building by means of suitable duct work. A return system was provided for air recirculation and the air change rate was approximately 13 turnovers per hour. Relative humidity was maintained at 45 to 60 per cent and a dry bulb temperature of 78 to 100°F. It is general practice at the ranch at which the tests were run to start 6,000 day-old leghorn cockerels in each brooder house and sell out the house at the end of approximately 12 weeks. Most growers vaccinate extensively for *Laryngotracheitis* and Newcastle's disease.

A summary of the data obtained by Mr. Sauer on white leghorns is given below:

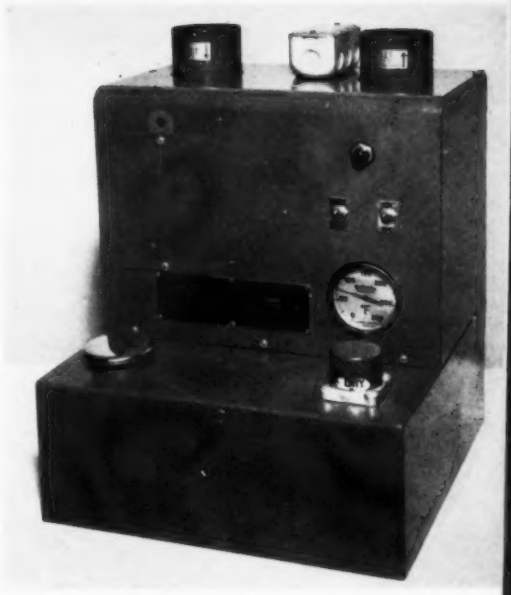
	Glycolized House (No Vaccination)	*Vaccination* (No Glycol)*	*No Glycol-No Vaccination*
Chicks Bought	17,460	10,860	5,545
Chicks Sold	16,613	8,957	3,825
Chicks Lost	847	1,903	1,720
Per Cent Lost	4.8	17.5	31.0
Pounds of Chicken Sold per Chick Bought	1.8	1.52	1.3

*—For Newcastle's Disease and *Laryngotracheitis*.

It was also noted that the chicks raised in glycol vapor gained weight more rapidly than the control group. The glycolized chicks averaged about 25 pounds per dozen while those formerly grown averaged 21 pounds per dozen. The glycolized houses were sold out after 10 weeks as compared with 11 weeks for the "control" houses. These results appear to indicate that glycol vapors may aid in diminishing losses from Newcastle disease and *Laryngotracheitis* but they should not be interpreted as indicating the use of glycol vapors to the exclusion of other established control practices such as vaccination.

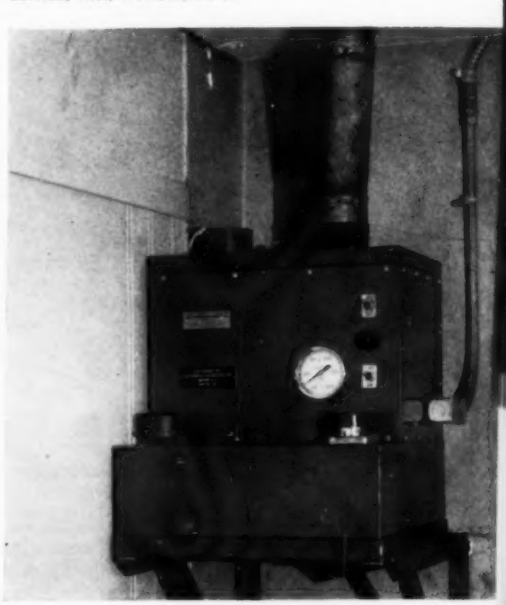
Dr. DeOme experimented with glycol vapor in poultry houses several years ago. The tests were not too successful, probably because of dust-borne pathogens He, therefore, feels that the very encouraging results obtained with glycol vapor in the tests described above indicate that the design of the brooder house and air handling system are important factors. It is understood that the houses in which the tests were run were designed by Air Engineering, Inc. and that the inlet air is filtered and scrubbed with a glycol-water solution, thus largely eliminating dust-borne pathogens as a means of infection.

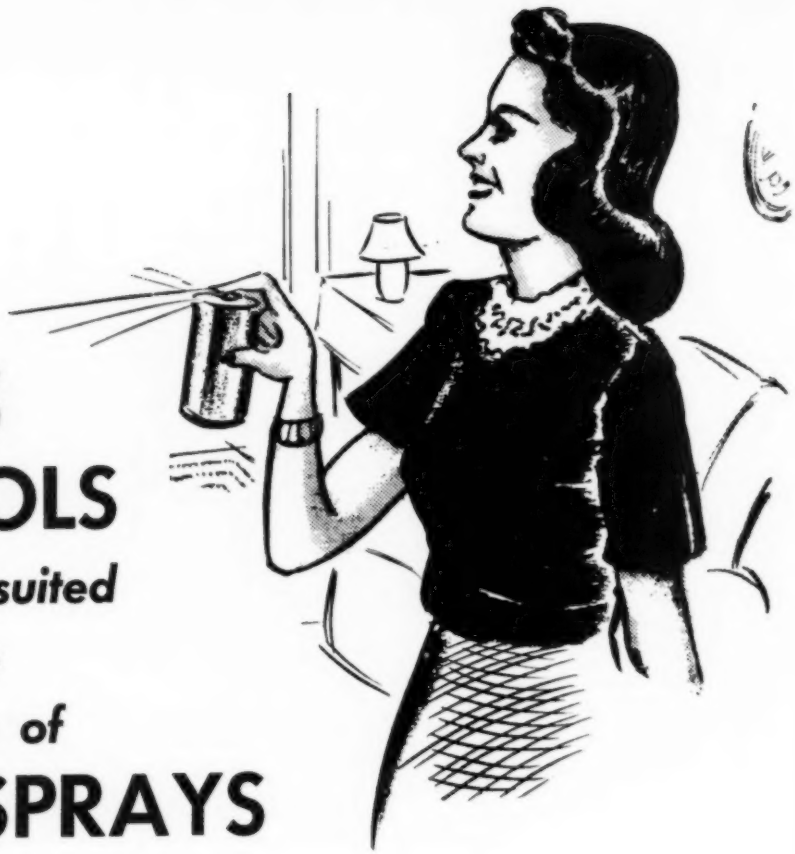
Poultry Diseases: On the basis of the many chamber tests with glycol vapor against bacteria and viruses, it appears reasonable to expect that it will aid in the reduction of poultry losses particularly from air-borne virus diseases such as *Laryngotracheitis* and Newcastle's. Dr. Krugman has found in test chamber studies that Newcastle virus is extremely susceptible to glycol vapor (25). The *Laryngotracheitis* virus may also be killed by glycol vapor as during Mr. Sauer's tests an epidemic of "Laryngo" broke out in all of the control houses, causing the death of 200 to 300 chicks per house per day until vaccination curbed further losses. The disease did not spread to the glycolized houses even though personnel moved freely between the test and control



Glycol vaporizing unit for commercial air conditioning and forced ventilation systems.

Actual installation of glycol dispensing equipment in New York building. Both photographs are of equipment made by Air Purification Service, Inc., Newark, N. J.





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brooders. Vaccination is not used in the glycol treated houses.

Use of Glycol Vapor in Schools

WHILE tests are now being conducted in several schools by the New York State Department of Health and others, no conclusive evidence on the value of glycol vapor in reducing absenteeism over a period of years in large student groups, has been obtained as far as we know.

San Gabriel Public School: The most comprehensive information available was obtained from Dr. A. Keim, (36) Superintendent of the San Gabriel, California, public schools through the courtesy of G. R. Steinbach. The tests were run between September 13, 1948 and April 22, 1949 and one room in each of the first, second, and third grades was supplied with glycol vapor by means of six vaporizers manufactured by M. F. Robertson and Sons, Inc. The total remaining six rooms in the first, second and third grades were used as the controls. The absenteeism rate in the glycolized rooms was 4.93 days per 100 pupil days and in the control rooms, 6.63, which is equivalent to a reduction of 25.6 per cent in the glycolized rooms. Total pupil days in the test rooms amounted to 14,836 and in the control rooms, 29,055. Forced air circulation equipment was not available and ventilation was secured by opening windows. No epidemics of measles, mumps, chicken pox or other children's diseases occurred during the test period in either the control or test groups.

Discussion

WHEN considering the use of glycol vapor for sanitizing air, it should be remembered that glycol is most effective against air-borne bacteria and viruses suspended therein in droplet nuclei. It is of no value in combating diseases spread primarily by "contact" and of limited value against dry dust-borne organisms. Available data indicates that viruses may be particularly susceptible to inactivation by glycol vapor (25, 11, 15, 37).

Effect of Glycol Vapor on Aerial Contamination: The use of settling plates to determine aerial contamination is not an accurate method although it is commonly used. On the basis of many tests in commercial installations reported to the writer, it appears that reductions in the order of 50 per cent in total aerial contamination based on settling plate data should be expected in an average installation. In some cases, reductions have been lower and in other cases higher. A bubbler sample in which a known volume of air is passed through a nutrient broth is preferred. Reductions in the bacteria content of air determined by means of bubbler samples in hospitals are generally considerably greater than those shown with settling plates, as in most instances only bacteria carried on particles sufficiently large to settle by gravity are shown by the plates (1, 10, 12). Reductions in total aerial contamination of 70 to 95 per cent are commonly shown in bubbler-sampler tests.

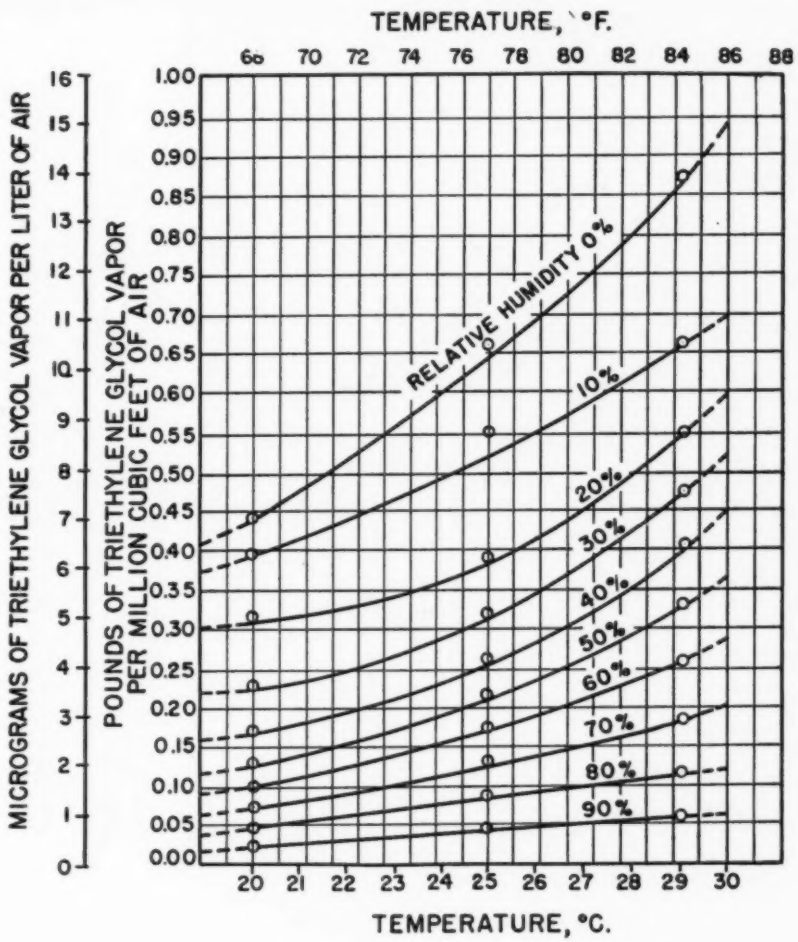
Laboratory chamber tests on specific bacteria and a variety of specific viruses have proved that glycol vapor is more effective on air-borne droplet nuclei in killing or inactivating most of the common pathogens than it is on the non-pathogens (7, 38, 39). It is, therefore, generally agreed that the reduction obtained in the pathogen content of the air is greater than the reduction indicated by the so-called "total bacteria" counts shown by agar settling plates or bubbler-samplers.

Correct Use of Glycol Vapor: A glycol vapor concentration of 50 to 100 per cent of saturation should be maintained at all times as the air is being continually reinfected by the occupants. The amount of glycol vapor that can be carried in air at saturation is shown on Chart I (40). Experience indicates that in order to allow for condensation and absorption the rate of vaporization should be approximately twice that shown by the data. The amount of glycol vapor required to treat air is very small, being approximately one-quarter pound per million cubic feet at 70°F. and 40 per cent humidity. This is equivalent to a concentration of one-half part per million which is lower than the concentration of the rarest gases in air such as hydrogen, neon and helium. During a life span of 100 years, approximately one-half pound of triethylene glycol vapor would reach the lungs of a human if he spent 12 hours of every day of his life in an atmosphere containing a glycol vapor concentration equivalent to 50 per cent of saturation.

The humidity of the air should be between 20 and 50 per cent for most effective antibacterial action although good results are obtainable between 15 and 55 per cent humidity. The humidity in most occupied areas generally falls between these limits during the winter months or can easily be increased to the minimum value. As a general rule, the dry bulb temperature should be held between 60 and 85°F.

It is necessary to know the number of air changes per hour as well as the size of a room and its temperature and humidity, in order to be able to estimate the required vaporization rate. After an installation has been made, the glycol vapor

Chart I



Saturation concentrations of triethylene glycol vapor at various relative humidities for temperatures from 20.0°C. to 29.0°C. Data by H. Wise and T. T. Puck, SCIENCE, May 23, 1947, Page 556

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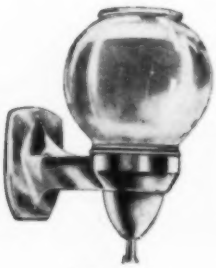

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No. 400

concentration should be tested to make certain it is adequate.

Commercial installations should be made only under the supervision of qualified engineers experienced with air handling problems. In properly designed installations in air conditioned rooms and buildings or in areas provided with forced air circulation, no difficulty has been encountered in maintaining a satisfactory concentration without the aid of a Glycostat or other concentration instrumentation. Maintenance has been negligible when properly designed equipment was used. Slight condensation on cold windows or surfaces is generally noticeable, although not seriously objectionable.

If a vaporizer is operated in a home or other room not provided with air circulation equipment, the rate of vaporization should be increased occasionally until a slight fog resembling a cigarette smoke haze is noticeable against reflected light and the rate of vaporization then decreased in small increments until the fog disappears. Operation at fogging concentrations should not be continued in inhabited areas as it may cause softening of the finish on furniture. The anti-bacterial and anti-viral activity of glycol vapor is not increased by the use of a supersaturated atmosphere.

Glycol vapor treatment is a new means of sanitizing air. It reduces the incidence of air-borne infections and its limitations and method of application are different from ordinary chemical germicides. Triethylene glycol is not a sanitary chemical in the usually accepted meaning of the word. When diluted with water for washing dishes, floors or walls, it is of little or no value depending upon the dilution and it should not be used for this type of application. Relatively few organizations today have proper test chamber equipment or have had sufficient experience with air handling, psychrometry, ventilation, filtration, air hygiene and glycol vapor techniques to be able to run proper independent tests. It is strongly recommended that anyone contemplating tests involving glycol vapor seek advice and recommendations from a qualified source.

Triethylene glycol sold for air sanitation must be registered with the Department of Agriculture in accordance with the requirements of Public Law 104—80th Congress.

Summary and Conclusions

THE death rate of bacteria and viruses in droplet nuclei exposed to triethylene glycol vapor in laboratory test chambers is very rapid. Several chamber tests have shown sterile air in the first samples withdrawn from the chamber as soon as possible after the spraying of the pathogens ceased. Field tests also show rapid reductions in the bacterial content of the air following the use of glycol vapor. Actual sterility, however, is not obtained probably because of the presence of dust-borne bacteria. While dust control measures have proven desirable in hospital wards and barracks, their value in an average office, home or factory has not been determined.

In the many well designed glycol vapor installations that have been made in air conditioned rooms or other areas provided with forced air circulation, no difficulty has been encountered in maintaining a satisfactory concentration without the aid of control equipment to regulate the rate of glycol vaporization.

In the chronic toxicity tests reported by Dr. Robertson and associates, monkeys and rats were exposed to high vapor concentrations for 12 to 18 months. Oral doses representing 50 to 100 times the amount the animal could inhale were also administered. No ill effects either from breathing or drinking propylene or triethylene glycol were observed. No ill effects in humans living in glycolized atmospheres have been reported.

Tests have proven that under certain ideal conditions a very high percentage of upper respiratory tract diseases can be prevented by the proper use of glycol vapor (11). Tests also indicate that cross-infections in infants' wards can probably be reduced (10, 35). Whether or not glycol vapor can prevent or reduce significantly the spread of air-borne infectious disease in an average home, school or office has not yet been conclusively demonstrated. Not enough is known about the mechanism of the spread of air-borne disease to permit definite conclusions to be drawn concerning the effect on the spread of upper respiratory diseases by partial reductions in the concentration of air-borne bacteria and viruses. Many individuals that have had experience with glycol vapor report that in their opinion its use has proven beneficial.

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Synthetic Phenols in

PINE TYPE DISINFECTANTS

By Paul A. Wolf*

Dow Chemical Co.

WITHIN the last few years there has been an increasing interest in the use of germicidal additives for pine oil disinfectants. The purpose of this paper is to discuss the effect of synthetic phenols in particular upon the physical and germicidal properties of pine oil formulations. The term pine type disinfectant denotes a germicidal formulation with properties similar to pine oil mixtures. It is, therefore, of interest at this point to review the history, specifications and properties of straight pine oil disinfectants. In 1937, the NAIDM requested our Government to establish a commercial standard for pine oil disinfectants. At the same time specifications were submitted as a basis for such a standard. In 1938, this recommendation was accepted by the Federal Food and Drug Administration as pine oil disinfectant, Commercial Standard CS69-38.

The specifications for this disinfectant were listed as follows:

TABLE I

Specifications for Pine Oil Disinfectants CS69-38

1. They shall contain at least 60% by weight steam distilled pine oil.
2. They shall contain less than 10% water.
3. They shall contain an emulsifying agent and remain clear and homogeneous under normal and reasonable conditions of storage.
4. They shall produce a stable emulsion in water of zero hardness at 20°C when diluted in the ratio of 5 parts disinfectant with 9 parts of water.
5. They shall have a phenol coefficient of 3 to 4 against *S. Typhosa* when tested by the F.D.A. procedure.

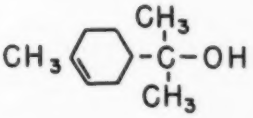
Essentially, pine oil disinfectants are germicidal mixtures that have a characteristic odor, are clear as formulated, but give stable, milky emulsions when diluted to a concentration suitable for use. The properties of pine oil formulations have been reviewed in detail by Reddish (1). McCoy, Stevenson and Hasseltine (2) first reported that the germicidal compounds in pine oil were found in the terpineol fraction. These authors also reported that these bactericides for some unknown reason have activity against many Gram-negative organisms such as *Salmonella typhosa*, but they do not inhibit Gram-positive organisms of the class represented by *Staphylococcus aureus*.

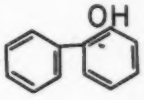
Adding Germicides of Interest

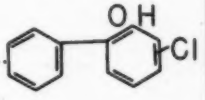
DURING Wold War II and up to the present time there has been an ever increasing interest in disinfectants having activity against both Gram-positive and Gram-negative bacteria. For this reason many manufacturers have been interested in adding a germicide to pine oil formulations in order to obtain this combined germicidal action, and, at the same time maintain the characteristic odor of pine oil. The synthetic phenols, being compatible with pine oil and having germicidal activity against a wide range of organisms, are being added to pine oil by many manufacturers to give a pine type disinfectant. Since synthetic phenols are quite similar in chemical structure to the compounds found in pine oil, it is not sur-

TABLE II

CHEMICAL STRUCTURE OF TWO SYNTHETIC PHENOLS AND TERPINEOL

TERPINEOL ..... 

ORTHO-PHENYLPHENOL ..... 

4 & 6 CHLORO-2-PHENYLPHENOL ..... 

*Before NAIDM 36th Annual Meeting, Dec. 5, 1949, Hotel Mayflower, Washington, D. C.

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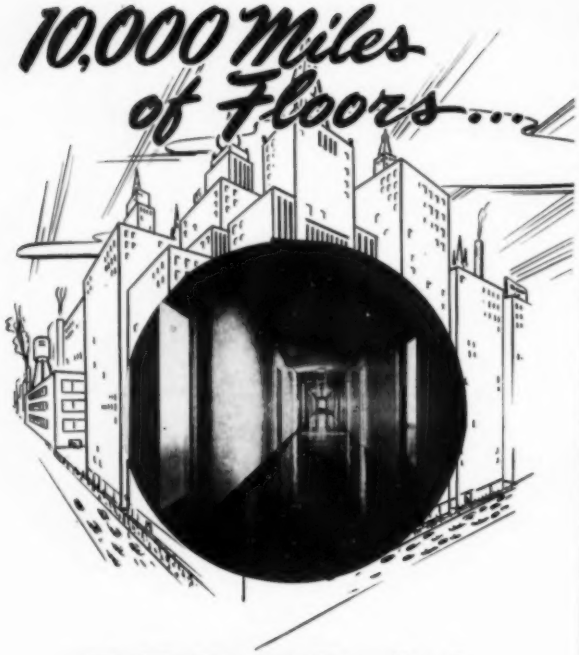

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ALSO AVAILABLE IN CONCENTRATED FORM—24% SOLIDS . . .

STABILITY GUARANTEED

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When a product carries the name "Mione," you can be sure it's good. And profitable, too. The new Mione Liquid Hand Soap is no exception because:

1. It always measures up to the same high standards of quality and uniformity.

2. It's made from double distilled coconut oil, with glycerine retained.

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Makers of fine hand soaps for 35 years
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prising that they are in general mutually soluble. (See Table II).

Data to illustrate this mutual solubility of several phenols in pine oil are given in Table III.

TABLE III

Solubility of Several Phenols in Pine Oil

	G. per 100G. Pine Oil
o-Phenylphenol	257
2, 4, 5-Trichlorophenol	178
4 & 6 Chloro-2-phenylphenol	infinitely sol.
2-Chloro-.-phenylphenol	73

If the added germicide is liquid at room temperature as in the case of 4 and 6-chloro-2-phenylphenol, one can add the compound along with the pine oil and formulate in the same manner as pine oil alone is formulated. On the other hand, if the phenol is a solid at room temperature one may have to heat the pine oil mixture in order to speed up the rate of solution. In either event the mutual solubility of phenols and pine oil is such that no formulation problem arises when a phenol is added.

Table IV contains typical formulations of pine type disinfectants fortified with phenols.

The germicidal effect of 4 and 6-chloro-2-phenylphenol on pine oil formulations is typical of the class of phenols having phenol coefficients above 100. Usually about one per cent of phenol is equivalent in germicidal activity to 15 to 20 per cent pine oil when the test organism is S. *typhosa*. In addition, activity against S. *aureus* is gained unless the ratio of pine oil to phenol is too great.

The curve illustrated in Table V shows the effect of the ratio of pine oil to o-phenylphenol upon the germicidal activity of the formulations against both S. *aureus* and S. *typhosa*. As the ratio of pine oil to phenol increases, the activity against S. *typhosa* increases. However, as this ratio exceeds one, the germicidal activity against S. *aureus* decreases at a rather rapid rate. Further work has shown that the loss in activity against S. *aureus* is related to the ratio of pine oil to phenol and not to the absolute amounts present. The point at which the germicidal activity begins to decrease seems to vary with different phenols. For example, 4 and 6-Chloro-2-phenylphenol may not lose activity until a ratio of pine oil to phenol of more than three is reached.

TABLE IV

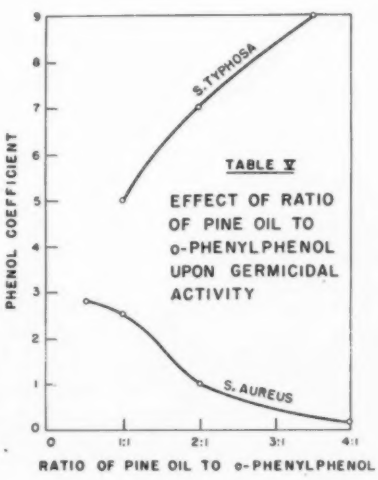
Germicidal Effectiveness of Several Phenols in Pine Oil

Conc'n. phenol compound % by weight		Conc'n. Pine Oil % by wt.	Phenol Coefficient versus S. Typhosa	Phenol Coefficient versus S. Aureus
		70	5-6	less than 1
o-Phenylphenol	10	10	4-6	2.5
o-Phenylphenol	10	20	6-8	1 .
o-Phenylphenol	10	40	7-9	less than 1
4 and 6 Chloro-2-Phenylphenol	4	10	5-6	4-5
4 and 6 Chloro-2-Phenylphenol	3	35	6-8	less than 1.5

In some instances phenol-pine oil formulations may have activity against S. *aureus* when freshly prepared, but lose this activity completely after standing for a week or more. This is quite likely to occur when the ratio of pine oil to phenol is in the critical range already discussed. Strangely enough this phenomenon seems to be limited to S. *aureus;* for results with S. *typhosa* are unaffected.

Cost Factors

THE cost of preparing a pine type formulation in comparison with a straight pine oil mixture depends upon the relation of the cost of the phenol added to the cost of the pine oil replaced. The amount of phenol required will, in turn, depend upon its germicidal activity. Compounds having phenol coefficients of 100 or more usually can replace pine oil at a ratio of one part phenol to 15-25 parts pine oil. Knowing the costs of the raw materials one can readily calculate the costs of any contemplated replacements.



Summary

LABORATORY studies and commercial use show that synthetic phenols such as o-phenylphenol, 4 and 6-chloro-2-phenylphenol and 2-chloro-4-phenylphenol can be added to pine oil formulations without any added difficulties in formulation. Added activity against S. *typhosa* is gained, and, if the ratio of pine oil to phenol is properly adjusted, activity against Gram-positive organisms such as S. *aureus* is obtained as well. Furthermore, the addition of phenols does not detract from the desirable properties of pine oil formulations. The odor of pine oil and the characteristic milkiness in use dilution are still present. In conclusion, the fortification of pine oil with synthetic phenols gives an all-purpose disinfectant, which satisfies the demands of the consumer for a product with a wide range of antimicrobial activity.

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(1) Reddish, G. F., *Soap* 17, (9), 88 (1941)

(2) McCoy, G. W., Stevenson, A. M., and Hasseltine, H. F. U. S. Public Health Service, Public Health Bulletin 42, 20, 41 (1917).

Greetings to Members

of the N. A. I. D. M.

. . . as this 36 year old organization holds its annual meeting — prepares to change its name to The Chemical Specialties Manufacturers Association—and to embark upon an expanded program of operation.

BUCKINGHAM WAX COMPANY

Mfrs. of Floor Waxes—Soaps—Cleaners—Polishes

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SEASON'S GREETINGS

from

Compagnie Parento, Inc.

Bureau of Federal Supply Offers Revised Floor Wax Specification

THE Bureau of Federal Supply, Washington, has just issued a proposed revision of its Specification 784 covering Water Emulsion Floor Wax. Daniel Klatzko, acting chief of the Specifications Division, has asked that interested parties attend a meeting to be held December 8 from 9:00 A.M. to 4:00 P.M. in Room 6018, Bureau of Federal Supply, 7th and D Streets, S.W., Washington, D. C., to offer any comments and suggestions as to possible desirable changes in the present form of the specification.

General requirements of the specification are as follows:

3.1 *Nonvolatile matter (total solids).* The nonvolatile content shall be not less than 12 per cent.

3.2 *Wax content (Benzene Soluble).* The benzene soluble content of the total organic solids shall be not less than 65 per cent.

3.3 *Softening point.* The softening point of the wax shall be not less than 80°C.

3.4 *Penetration.* The penetration of the wax shall be between 4 and 5.5.

3.5 *Ash content.*

3.5.1 *Sulfated nonsiliceous ash.* The sulfated nonsiliceous ash content shall not exceed 3.5 per cent of the nonvolatile matter.

3.5.2 *Siliceous ash.* The siliceous ash shall not exceed 40 per cent of the total solids.

3.6 *Volatile solvents.* The water emulsion floor wax shall be free from petroleum distillate, and other organic volatile solvents. The distillate shall consist of not less than 99 per cent water.

3.7 *Free oil.* There shall be not more than 400 milligrams of free oil per 100 milliliters of sample, when tested in accordance with paragraph 4.2.7.

3.8 *pH range.* The pH range of the water emulsion floor wax shall be not greater than 10.0 nor less than 8.0.

3.9 *Odor.* The water emulsion floor wax shall not have an offensive odor nor shall it develop an offensive odor in the container on standing.

3.10 *Viscosity.* The viscosity of the water emulsion floor wax shall be not more than 1.90 centistokes at 37.8°C. (100°F.).

3.11 *Gloss.* The gloss of the dried film shall be not less than 85 when applied to a black glass plate having a gloss of 95.

3.12 *Drying time and film characteristics.* The water emulsion floor wax shall dry hard to touch in not more than 20 minutes. The film produced shall show no sign of whiteness, shall have a smooth finish, and shall be clear, free from particles and practically colorless.

3.13 *Sediment.* The amount of sediment present in the water emulsion floor wax shall be not more than 0.1 per cent by volume and shall be soft and free from grit.

3.14 *Stability.* The water emulsion floor wax shall pass the requirements described in 3.14.1 and 3.14.2.

3.14.1 *Freezing cycle.* The water emulsion floor wax shall meet the requirements of 3.10 and 3.11 after being subjected to three cycles of freezing and thawing.

3.14.2 *Heat test.* The water emulsion floor wax shall meet the requirements in 3.10 and 3.11 after being subjected to a temperature of 52°C. (125°F.) for 7 days (168 hours).

3.15 *Levelling and spreading.* The water emulsion floor wax shall dry with a smooth, uniform, glossy film, with no tendency to pull up in ridges or puddles.

3.16 *Wet abrasion.* The dried film shall show no evidence of removal, whiteness, or discoloration after 25 oscillations when tested as specified in 4.2.15.

3.17 *Removability.* The dried film on the test panel shall be completely removed after 75 oscillations when tested as outlined in 4.2.16.

3.18 *Flexibility and adhesion.* The dried films shall be flexible and shall adhere firmly to the surface without checking, cracking or peeling when tested as specified in 4.2.17.

3.19 *Water spotting.* The dried film shall show no separation from the surface of the panel and no whitening after slight buffing of the film when tested as specified in 4.2.18.

3.20 *Tackiness.* The dried film shall not be tacky when tested as specified in 4.2.19.

3.21 *Slip resistance.* The dynamic coefficient of friction of the dried films shall be not less than 0.4 at 23°C. and 50 per cent relative humidity. (see 4.2.20).

3.22 *Compliance with Underwriters' Laboratories.* The bidder shall submit with his bid evidence that the water emulsion floor wax he proposes to supply under this specification conforms to the standards of the Underwriters' Laboratories, Inc., as regards fire and casualty hazards. An Underwriters' Laboratories label on each container or the listing of the Underwriters' Laboratories, Inc., in their latest "List of Inspected Appliances relating to Accident Hazards" or supplements thereto or card report in effect on date of invitation for bids will be acceptable as evidence that the water emulsion floor wax conforms to this requirement. In lieu thereof, the bid must be accompanied by a certified test report from an independent testing laboratory stating that tests conducted in accordance with the tests required by Underwriters' Laboratories, Inc., show that the material offered conforms to the requirements thereof. This does not absolve the bidder from complete compliance with the additional requirements of this specification.

The following summaries have been prepared of some of the sections dealing with test methods. These are not direct quotations from the specification itself. Copies of the complete specification may be obtained by addressing the Bureau of Federal Supply.

4.2.7. A solid residue, on evaporating a sample previously extracted with two portions of petroleum ether, indicates acceptability. Procedure is given for residues other than solid.

4.2.15 *Wet Abrasion Test.* Specifications for equipment and test procedure are given; an electrically driven brush in reciprocating motion over rubber tile floor panels, which are then examined for scratches.

4.2.16 *Removability.* Equipment and test specifications are defined. Any evidence of wax film remaining after test indicates incomplete removal.

4.2.17 *Flexibility and adhesion.* Bend panels coated with two layers of wax sample (per specification), through an arc of 180°. Examine surface at bend.

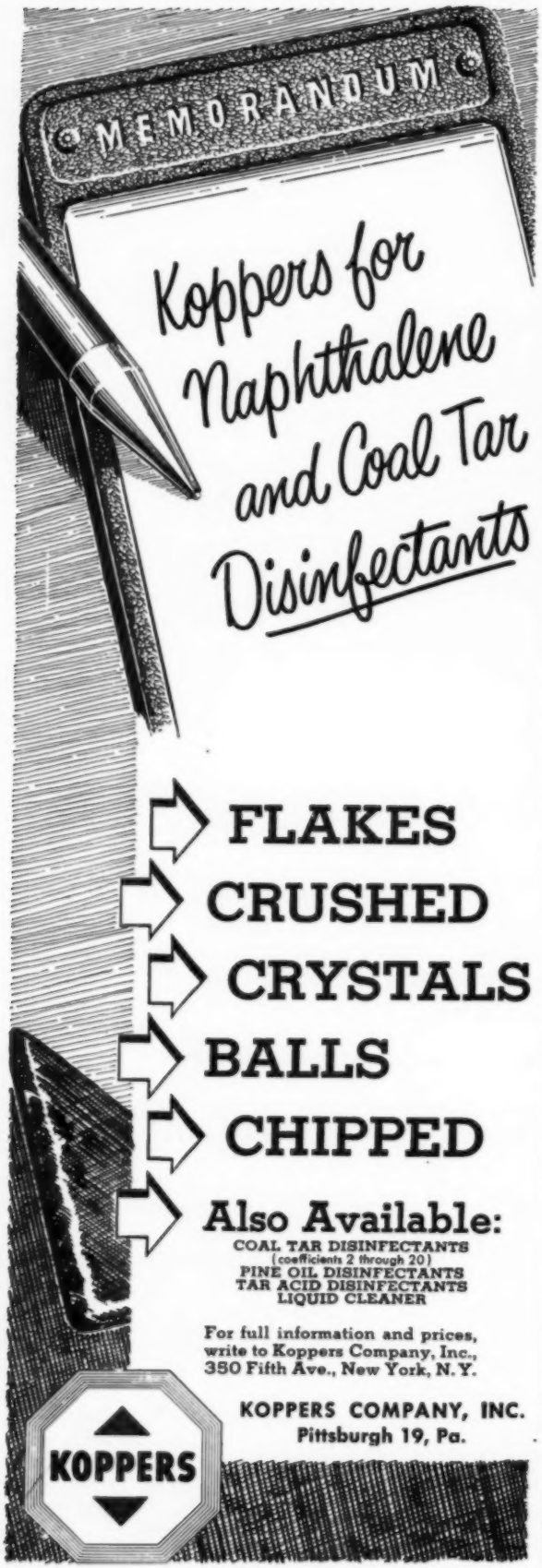
4.2.18 *Water spotting.* One milliliter of distilled water placed for one hour on dark linoleum panel, previously coated with two layers of sample wax, is wiped off and surface examined for separation of film and whiteness.

4.2.19 *Tackiness.* A piece of glazed paper is placed on prepared panel, and remains under a weight for one hour. The film is considered tacky if the paper does not fall away in 30 seconds when the panel is raised to a vertical position.

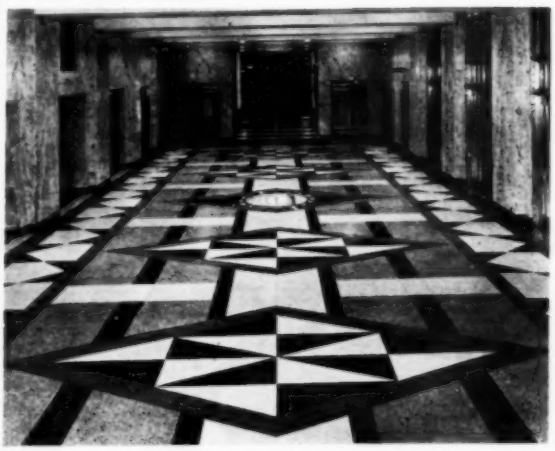
4.2.20 *Slip resistance.* Specifications for test surface, apparatus, and procedure are given. The slip resistance is defined by the dynamic coefficient of friction, which is determined with the Sigler pendulum-impact type slipperiness tester.

Warwick Names Distributors

The appointment of west coast and southeastern distributors for their line of microcrystalline Mekon, emulsifiable Cardis and sugar cane waxes was announced recently by Warwick Wax Co., subsidiary of Sun Chemical Corp., Long Island City, N. Y. E. S. Browning Co., division of Innis, Speiden Co. is exclusive distributor of Warwick waxes in California, Oregon and Washington. In Georgia, Florida, Alabama and Mississippi, sole distribution is being handled by L. C. Morris Co., Atlanta.



Sell Your Customers Longer Life For Terrazzo Floors



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- *Use on Old or New Floors to Help Seal in the Moisture During Curing Period*
- *Water-white, Non-yellowing . . . Will Not Discolor Tile*
- *Prevents Dusting, Chipping and General Disintegration*
- *Resists Action of Water, Soap, Acids and Alkali*
- *Applied by Lamb's Wool Applicator or Brush*
- *Quick Drying—Less Than One Hour—Covers Approximately 750 Square Feet per Gallon*
- *Surface Protected Against Stains*
- *Provides a Perfect Base for TERRAZZO Finish*
- *Easily Removed with Special Solvents*
- *Underwriters' Laboratories Approval as an Anti-Slip Material*

A Tremendous Market—practically every office building and public building needs this product. The superiority of Federal Terrazzo Sealer is easy for you to demonstrate—it seals easily—quickly!

FEDERAL VARNISH DIV.
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New Rodenticide Available

THE anticoagulant rodenticide W. A. R. F.-42 (3-a-phenyl-B-acetylethyl-4-hydroxy coumarin) is reported currently under rigorous field testing. U. S. D. A. recently granted permits for shipment of powders for experimental field trials by qualified operators. R. J. Prentiss & Co. and S. B. Penick & Co., both of New York, are the bulk distributors for the Wisconsin Alumni Research Foundation, holders of U. S. patents (Nos. 2,427,578-9) covering the rodenticide.

W. A. R. F.-42 is one of a series of 3-substituted 4-hydroxycoumarin anticoagulants that has arisen from the laboratories of Professor Karl Paul Link at the University of Wisconsin. It was first made by Dr. Miyoshi Ikawa in 1942 by condensing 4-hydroxycoumarin with benzalacetone, and its outstanding capacity to kill rats and mice was established by Dr. Lester D. Scheel and Dorothy Wu in 1948. Their work was quickly confirmed by extensive independent tests conducted at the U. S. D. I., Denver, Colorado, Fish and Wild Life Laboratory by Dr. Glenn Crabtree and the W. A. R. F. control laboratory in Madison.

W. A. R. F.-42 is a stable, colorless crystalline solid m.p. 161°C. It is acidic and has a low solubility in water, but the sodium salt is readily soluble. Both are odorless and tasteless. The free acid is used in solid baits, the sodium salt for water solution (fountain) baiting. W. A. R. F.-42 kills by destroying the coagulating powers of the blood and by causing capillary damage. The stricken rodents die a peaceful death from internal bleeding. Single large doses are not effective, but small daily exposures over a short period give a high percentage of kill, (90%-100%). A daily intake of about 0.025 to .0125 milligrams per gram of bait for 6-10 days will usually kill the average rat and mouse. Bait shyness and tolerance do not develop; both sexes are equally vulnerable to the product and seasonal effects are nil.

W. A. R. F.-42 is relatively safe to larger animals and the handler under the conditions prescribed for its use. Allergic manifestations, and other adverse reactions have to date not been experienced in the commercial synthesis, compounding and dispensing operations. When incorporated in solid bait at the concentration of about 0.025% D.S. basis, or in water at .03-.04 mg. per cc., the most effective concentrations for killing rats and mice, a healthy cat, dog or curious child would have to consume large quantities of the bait over a period of days before fatal hemorrhage would occur. Exposed pets will usually show symptoms of bleeding before it is too late to save them by administering massive doses of Vitamin K. For accidental poisoning in man massive doses of Vitamin K and blood transfusions are advised.

Professor Link and Dr. Martin Seidman have developed a process for incorporating W. A. R. F.-42 on grains in such a way that the final products are stable and attractive to rodents. They combine effective rodent killing powers, with easy and safe handling properties. They are being shown at the NAIDM meeting.

Greenwalt Defends Bigness

In a recent address before the service clubs of Wilmington, Del., meeting at the Hotel du Pont, Crawford H. Greenwalt, president of E. I. du Pont de Nemours & Co., Wilmington, stated that "political attrition against American industry must not be allowed to disfranchise the votes of millions of satisfied customers whose decision dictates business success." He further pointed out that "in the national interest no steps must be taken that penalize success or that discourage the efficient producer from producing. We dare not hobble the willingness of a business to venture by refusing it the fruits of its success or by holding out the doubtful privilege of government regulation when that success has been achieved," Mr. Greenwalt told his audience of Lions, Kiwanis, Exchange and Optimist Clubs, which joined with the Rotary Club at the meeting.

"We can preserve competition only by allowing it to operate, and so make effective the votes of millions of satisfied customers," he continued, adding "it is vital to the strength, happiness and future standard of living of the people of this country that we permit the free exercise of this simple economic function. Small business, as such, must be encouraged to grow larger. And large business, capable of taking the great risks involved in the difficult industrial tasks, must not have its sinews weakened by political attrition," Mr. Greenwalt declared.

Anchor Hocking Changes

A number of changes in personnel in its container division factories were announced recently by Anchor Hocking Glass Corp., Toledo, O. J. G. Callinan is now plant manager of Maywood Glass Co., an Anchor Hocking subsidiary. He was formerly plant manager of the corporation's tableware division plant No. 2 at Lancaster, O. James M. Fordham, plant manager of the firm's container factory at Connellsville, Pa., has been transferred to a similar post at the Salem, N. J., container plant. James W. Sharpe, formerly assistant, is now plant manager at Connellsville and Harris Snell, formerly of the furnace engineering department at Lancaster is assistant plant manager at Connellsville.

New Scarry Dispensers

E. J. Scarry & Co., Denver, recently announced a new dispenser for alcohol and an improved one for liquid soap for use in hospitals. Both are operated automatically by "electric eyes," which eliminate foot pedals or floor buttons commonly used with such devices. Using the soap dispenser, in conjunction with water taps operated by knee levers, the company claims, the surgeon can scrub his hands and rinse them in alcohol for quick drying, without touching anything.

WANT
AEROSOL BOMBS
FILLED ?

G. BARR & COMPANY, dependable name in private label manufacture, has now added the newest and finest equipment to fill your AEROSOL BOMBS. Capacity of more than one million bombs a month insures prompt delivery. Experienced laboratory guarantees control and is always at your service. Requests for information will receive immediate attention.

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"For Better Protection of the Public Health"

ProTexaL*

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Approved Sanitizing Hand Dishwashing Compound

CLEANS AND SANITIZES IN ONE SPEEDY OPERATION

ALL TOO OFTEN a separate germicidal dip bath is omitted because of the extra time and labor required. PROTEXAL, carrying built-in sanitizing protection, offers a more foolproof safeguard for the public.

PROTEXAL also offers these additional advantages:

- Abundant suds in very hard water
- Rinses freely in hot or cold water—no towelling required.
- Extra mildness—easy on the hands
- Pink indicator color—turns green in solution.
- Attractively priced and economical to use.

For truly *better* dishwashing by hand, specify PROTEXAL.

National Milling & Chemical Company

Industrial Soap Products Since 1896

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Floor Sealers

(*From Page* 121)

and deteriorated through misuse can give additional service after sealing with a lacquer type compound designed for that purpose. However, this treatment is never recommended unless the conventional system fails to give a satisfactory surface.

Terrazzo: Being composed of marble chips and cement, a non-yellowing material which will penetrate and seal the porous cement areas should be used on terrazzo. All waxes, oils, soap and grease must be removed from terrazzo floors for the seal to penetrate. If the surface is clean, water will penetrate when spot tests are made. If not, the water remains on the surface. The seal should be applied in thin even coats. The sealers are generally of the lacquer type. It is not advisable to use oleoresinous type sealers for terrazzo surfaces because of discoloration.

Asphalt Tile: New surfaces should be maintained with self polishing water waxes. Never use oleoresinous, lacquer or oil sealers or oil cleaners on asphalt tile floors. Old surfaces which have become porous or have deteriorated due to misuse, or new surfaces on which a wax finish is not wanted but for which some protection is needed may be sealed with a lacquer type sealer based on alcohol or an emulsion sealer.

Cement: Cement floors, whether new or old, present problems seldom encountered with other floors. Most cement floors contain a large amount of free alkali or compounds which in the presence of moisture are strongly alkaline. Cement by its very nature is porous and tends to absorb moisture, particularly when either on the ground or below ground level. Many cement floors have been treated with a chemical hardener such as sodium silicate. It is necessary that these hardeners be removed before any finish can be applied. All cement surfaces should be etched and neutralized with a 10 to 15 per cent solution of muriatic acid before a finish is applied. The acid should contact the surface for about 30 minutes, then be rinsed off and the surface allowed to dry. Cement should be sealed or finished to prevent dusting caused by disintegration of the surface. Most finishes used on cement are pigmented for decorative purposes. However, in some instances a clear finish is used. Most cement sealers, whether clear or pigmented, are based on the oleoresinous type. Some special lacquer and emulsion types have been developed. Some of the rubber base coatings are of the lacquer type and others can be considered as combinations of lacquer and oleoresinous types. Where a clear sealer which gives practically no discoloration is desired, the type recommended for use on terrazzo floors can be used.

Before concluding, I would like to touch upon a subject which many of you have probably never considered to be in your field. I venture to say that members of this association sell the great majority of sanitary maintenance supplies used in buildings throughout this country. You handle all wash room needs, you sell soap, insecticides, towels, brooms, floor sealers and waxes and maintain the disinfectants, but you fail to sell the seal and finish for the wash room walls. In many buildings this seems to be a neglected item.

Recently a great amount of publicity was given to finishes of a plastic nature. A short time ago, prior to an advertisement, an article appeared in a leading magazine covering a plastic finish. This brought an avalanche of requests for information on whether this new type material would soon obsolete the conventional finishes as we now know them. Our laboratory has been investigating this type material since its use during the war as a finish for cartridge cases. We find that it is an excellent product for use on furniture and small wooden objects which can either be baked or allowed to cure at room temperature for ten days or two weeks. The material is an alcohol solution of a phenolic resin that must be cured with either heat or an acid catalyst. Before curing, the finish has low resistance properties, but after curing is very hard and has excellent resistance to most alkalis and acids. In its present stage of development it can be applied only to small objects unless sprayed. When the material is used at room temperature and cured with an acid catalyst, great care must be taken to prevent acid burning of the wood and thus producing a surface which is dark brown or has dark brown spots.

In conclusion it may be advisable to reiterate a few of the more important points necessary in producing a good job. Have good equipment. Use the proper sealer and be sure it is a good one. See that the surface is clean and free from dirt, oil, grease, wax or soap. Apply thin even coats and allow to dry sufficiently between coats. Whenever possible buff with steel wool between coats and be sure to buff after the first coat on new work.

Bar Form Detergents

(*From Page* 35)

Jay C. Harris, *Oil & Soap* 23: #4, 101-110 (1946).

The type of detergents used to date has been chiefly the anionics such as the substituted amides, alkyl aryl sulfonates, etc. In regard to the latter class J. C. Harris (*Rayon Textile Monthly*) Vol. 26 (1945) 77-80, 142 & 144) slightly favors decylbenzene sodium sulfonate over dodecylbenzene sod. sulfonate for synthetic-soap mixtures because of its greater water solubility.

A fourth category of bar form synthetics is their use in toilet soap bars, for increasing certain physical characteristics including foam power, etc. Work on this has been very meagre. It has been shown that nonionics have a definite solubilizing action on the soaps (L. McDonald, ibid). This discovery may be of benefit to soapers and renderers alike since it permits a lowering in the percentage of coconut oil in toilet soap base. A lowering to 19 per cent from the present figure of 20 per cent would save the purchase of approximately 30 million pounds of coconut oil per year and approximately one million dollars in excise taxes.

When milling liquid non-ionics

FIRST OF ALL . . . IS KNOXALL

KNOXALL Concentrate

A LIQUID CLEANER

Knoxall Concentrate combines the best qualities of a soap and the best qualities of a synthetic. It's easy to use because it instantly combines with water and leaves no undissolved concentrate to be wasted.

A LABOR SAVER

Knoxall Concentrate is ideal for general maintenance in institutions, factories, schools, etc. Its high quality makes cleaning easier, reduces hours of manual labor.

EXCELS IN HARDEST WATER

Knoxall Concentrate breaks the hardest water quickly and allows full benefit of the detergent action. It is not injurious to surfaces and is not affected by sub-zero temperatures.

A GOOD INTRODUCTION

Knoxall Concentrate packs eye appeal with its absolute transparency and clear red color. Tested, proved and approved, you will find Knoxall Concentrate an excellent introductory item for any account.

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INSECTI-SOL Longer float . . . deeper penetration . . . freedom from odor and stain—these are the important features you add to your insecticide sprays when you specify Penn-Drake Insecti-Sol as the base. Excellent for all types of sprays, this 100% volatile base is the perfect solvent for use with DDT solutions or DDT crystals in low concentrations.

SUPER-SOL Whenever fast drying or rapid evaporation is needed, specify Penn-Drake Super-Sol as your solvent. Ideal as a mothicide base, this odorless solvent also is recommended for use in odorless paints, home dry cleaners, DDT residual sprays, metal parts cleaners and in other products requiring a high flash.

penn drake products

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into a normal toilet base, the precaution should be taken to let the synthetic substitute for the normal 12-14 per cent water usually present in milling operations. Some water must be present, however, or the soap will flake and fail to plod properly. For example, the author found that the incorporation of 10 per cent nonionic liquid, 100 per cent active detergent, of the ethylene oxide rosin-fatty acid condensation type, required about six per cent moisture in the soap chips for best results. See also U. S. Patent 2,407,647 (Sept. 17, 1946. J. W. Bodman, assigned to Lever Bros. Co.) referring to soap and anionic synthetic detergent mixtures in bar form.

Formula 9

	Percent
Non Soap, Detergent (Santomerse)	4.25
Inactive Ingredient	0.75
Soap (20% Coconut oil 80% Tallow) anhydrous	77.00
Water	18.00
	100.00

In conclusion it appears that the all synthetic detergent bar has a small place as a specialty type product for medical use and for that small per cent of persons allergic to soap. Soap and anionic detergent mixtures are well adapted to Army and Navy use as a sea water detergent. A limited market is available. The use of small amounts of anionics in soaps has been mentioned. The most interesting field from a future development point of view, however, would appear to be the use of nonionics for purposes of modifying the fat formula, increasing the solubility or changing the plastic qualities during manufacture.

Tall Oil

(*From Page* 43)

Potash relatively free of chloride was tried in the preparation of liquid soaps, and even when necessary precautions were taken, a slight haze was visible after prolonged standing. Various chemicals were then tried, for example: a commercial sodium silicate, tetrasodium pyrophosphate, tetrapotassium pyrophosphate, trisodium phosphate, an excess of sodium hexametaphosphate to dissolve the insoluble calcium salts which might occur from the glass itself or from the hardness of the water used.

Sequestering agents opened up a new avenue of possibilities to the soaper as a means to check metal trace effects, as well as a surface modifier. In fact, they showed certain distinct advantages over the inorganic polyphosphates because they are highly compatible with organic groups at various concentrations, and they are remarkably stable in a water solution at various temperatures over the hydroxyl ion concentration range.

These sequestrene products are polyaminocarboxylic acids and manufactured under various trade names, as: "Nullapon B," "Kalox," "Sequestrene A," and equivalents. Usually, a maximum of one per cent is all that is needed to eliminate any cloudiness which might occur in the prepared liquid soap.

Kranich's (9) full and interesting report states:

> The glass containers themselves contributed definitely to the breakdown in clarity of the products. This is explained by saying that once the sodium silicate derived from the glass hydrolyzes to silicic acid, it is precipitated as a flocculating gelatinous meta-silicic acid (ortho silicic acid is soluble), the dissolution of this precipitate being prevented perhaps by the adsorption on its surface of a film of calcium stearate soap. Moreover, the calcium salts of the lower fatty acid homologues, decidedly more soluble, are readily dispersed.

In conclusion, tall oil is the cheapest source of fatty acids in the world. Because of this, it has proven to be a very useful raw material to the soapmaker. Physically, it is different today than the oil marketed at the beginning of the war. Through a wide research and development program since the war's end, refined tall oils are now non-crystallizing, light in color, less odoriferous, and uniform in consistency from tank car to tank car. Present research calls for the elimination of all of the sulfur compounds, and removal of the color bodies to make it more stable and attractive to the insecticide and disinfectant industry.

It takes a higher temperature and longer time to completely saponify the rosin acids in tall oil after the fatty acids have been saponified. This precaution eliminates stickiness, a frequent complaint we encounter whenever tall oil soap products are prepared for the first time.

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Mathieson Dihydrazine Sol

Mathieson Chemical Corp., New York, recently announced that dihydrazine sulfate, $(N_2H_5)_2SO_4$, is now being produced in semi-commercial quantities for the first time and is available in one-pound bottles and drums. Containing 37.5 per cent available hydrazine, N_2H_4, the salt is being produced as a flaked product. Applications suggested include its use in the synthesis of pesticides and herbicides. A technical data sheet, No. 124.1, on dihydrazine sulfate is available on request from the products development department, Mathieson Chemical Corp., 60 E. 42nd St., New York 17.

Breuer Show Exhibitor

Breuer Electric Mfg. Co., Chicago, displayed its line of heavy duty vacuum sweepers at the recent Chicago convention of the Theatre Equipment and Supply Manufacturers Association. The Breuer exhibit at the affair was the only one in the field of sanitation equipment or supplies for theatre operators.

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#65 REFINED EXTRA WHITE
#67 SEMI-REFINED

Particularly recommended in aqueous solution — because

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- REQUIRING LESS ALKALI
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CLEANERS BUILD VOLUME

(*From Page 39*)

during the particular time in which they are offered.

In the process of remodeling, the store was enlarged and completely modernized. The entire first floor is utilized for store sales area, with a rear entrance to an automobile parking lot. The basement is used for deliveries and storage and servicing. The store in question, which is located in a good income neighborhood, was subject to no change in competitive situation in its locality before or after remodeling.

The entire line of household products, with the exception of drug items and canning supplies, which were out of season, was used in the study as follows: household and cleaning supplies, 79 items; soaps and soap powders, 52 items; waxes and polishes, 36 items; laundry supplies, 35 items, and paper products, 33 items. The report shows that there was an increase of 1,506 household products sold after remodeling for a gain of 68.3 per cent. There were 122 more wax and polish units sold, an increase of 35.4 per cent. Laundry supply items were up by 354 units, a gain of 34.9 per cent. In addition, there were substantial increases in the following classifications: cleansers, shoe polishes, silver cream polish, furniture polish, window cleaner, glass wax, ammonia, bluing, liquid starch, etc.

The problem facing grocers today is reduced prices and higher operating costs. In order to protect his profit the grocer must keep his volume high to meet increased salaries, higher rentals and advanced heating and lighting costs. The salesman calling on the grocer, and aware of his customer's problem, can suggest the following three point formula, which produced the results mentioned in this article, as an aid in solving the grocer's problem. It consists of: 1.) selecting items that offer higher margins of profit; 2.) give them better display location; 3.) give them more space. In the survey reported on here, most

ITEMIZED SALE OF HOUSEHOLD PRODUCTS

Household and Cleaning Supplies

Item	BEFORE Units	$	AFTER Units	$
Windex Sprayer	3	.45	10	1.10
Windex 20 oz.	8	2.48	21	6.51
Windex 6 oz.	15	2.03	21	2.83
Glass Wax Pt.	35	20.65	74	43.66
Romite	5	.45	...	....
Windex Wax Pt.	....	....	9	4.41
Bon Ami Brick	32	3.20	62	6.51
Bon Ami Powder	140	16.10	110	12.65
Ajax Cleanser	100	11.50	187	21.51
Bab-O	225	25.88	217	24.95
Kitchen Klenzer	61	4.58	71	6.39
Cameo	116	13.34	164	18.86
Cameo Deal	5	3.25	...	....
Old Dutch	82	9.43	209	24.04
Wilbert Cleanser	35	3.23	78	8.19
Swift Cleanser	141	16.22	183	21.04
Swift Cleanser Covers	....	....	24	6.96
Skat 14 oz.	....	....	17	1.70
Skat Lg.	....	....	3	.87
Red Seal Lycons	21	2.42	30	3.75
S.O.S. Small	63	7.56	40	4.80
S.O.S. Large	14	2.88	56	11.76
Soilax	4	1.00	34	8.50
Vanish	20	4.20	37	7.77
Household Cleaner	7	1.61	8	1.84
Climalene	67	13.40	48	9.12
Air Wick	9	6.21	23	15.87
Air Renu	....	....	22	8.58
Calgon	12	4.68	77	30.03
Avalon Wall Paper Cleaner	31	7.60	7	2.03
Cincy Wall Paper Cleaner	39	13.26	4	1.56
Climax Wall Paper Cleaner	....	....	1	.38
Kroger Wall Paper Cleaner	2	.17	13	1.26

Wax — Polish

Item	BEFORE Units	$	AFTER Units	$
Bixby Jet Oil	64	8.00	16	2.00
Shinola, all colors	21	2.10	103	10.30
Griffin all White	2	.38	2	.46
Griffin all White	9	.90	...	....
Shinola White Liquid	1	.10	...	....
Shinola White Soap	9	1.35	1	.15
Wright's Silver Cream Sm.	27	5.13	54	11.88
Wright's Silver Cream Lg.	9	3.15	21	7.77
O. E. Scratch Remover	21	1.76	15	3.30
O. E. Red Oil Polish	7	.60	30	2.55
Wilbert's No Rub Furn. Polish	2	.58	35	10.15
Liquid Veneer Sm.	3	.57	4	.76
Liquid Veneer Lg.	12	3.96	25	8.25
Johnson's Creme Wax	16	9.44	12	8.28
O. E. Paste Wax	11	2.75	9	1.71
O. E. Paste Wax Lg.	27	14.31	9	4.77
Bruce Floor Cleaner	8	5.44	12	8.16
Johnson's Paste Wax	9	5.31	10	6.90
Aerowax	10	2.70	11	2.97
O. E. Polishing Wax	4	1.56	14	5.46
Simoniz for Floors	7	4.13	5	2.95
Johnson's Liquid Wax	6	3.54	2	1.38
Johnson's Glo Coat	8	4.72	15	8.85
O. E. No Rub Floor Wax	13	5.59	12	5.16
O. E. No Rub Floor Wax Qt.	2	1.46	7	5.53
Wilbert's No Rub	2	1.38	6	4.14
Johnson's Glo Coat Qt.	6	5.88	5	4.90
O. E. Cl. & Pol. Wax	4	3.16	6	4.98
Simoniz Qt.	4	3.92	6	5.88
Aerowax	7	3.43	7	3.43
Aerowax ½	....	....	2	1.78
Johnson's Glo Coat ½	10	15.90	6	9.54
Simoniz ½	....	....	4	6.36
O. E. No Rub Wax ½	3	4.17	...	....

Penetration...

Insecticides *must* get into every crack and crevice—under mouldings, behind baseboards, between plumbing—and your sprayer *must* have complete penetration to reach these hiding places.

Mistmaster Portable Electric Sprayers give perfect and complete penetration. In this patented sprayer, insecticides are first broken into minute particles by a rotary compressor, then warmed above room temperature, and finally, atomized completely by tremendous pressure at the nozzle.

The result is complete penetration. Insecticide floats longer in the air, settles gradually into every possible opening in complete strength, and does a thorough and effective job of coverage.

Other distinctive features of the *Mistmaster* Electric Sprayer are the Automatic Time Switch which can be set for spraying 1 to 24 minutes before shutting itself off, the volume control which regulates the density of spray to suit conditions, and the adjustable spray nozzle which may be directed in any position. Light in weight, built throughout to precision standards, this perfected sprayer is conveniently held in one hand, may be used for both portable and stationary spraying, and will give a life-time of thoroughly satisfactory service with all oil base insecticides.

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household products such as cleansers, polishes, ammonia, waxes, bleaches, etc., were found to have profit margins ranging from 25 to 30 per cent. The salesman of household chemical specialties can point to the increased tempo of merchandising activities in his own industry, where manufacturers are using every stimulant known to attract the consumer, as a lesson grocers might profit by.

SALES

	"Before" Remodeling	*"After" Remodeling*	*Increase* $	%
Household & Cleaning Supplies (A)	$ 410.42	$ 732.11	$ 321.69	78.3
Laundry Supplies	179.99	234.19	54.20	30.1
Paper Products	771.55	1136.24	364.69	47.3
Soaps-Soap Powders	1788.23	2241.27	453.04	25.3
Wax-Polishes	127.47	160.70	33.23	26.1
Total	$3277.66	$4504.51	$1226.85	37.4

(A) Includes cleansers, sprays, steel wool, brooms, mops, brushes, gloves, light bulbs.

SAFETY IN CHEMICALS

(*From Page 57*)

Chemical Co., St. Louis; Rohm & Haas Co., Philadelphia; Hercules Powder Co., and Atlas Powder Co., both of Wilmington; American Cyanamid Co., New York; Koppers Co., Pittsburg; Carbide & Carbon Chem. Corp., New York; Pennsylvania Salt Mfg. Co., Philadelphia; Merck & Co., Rahway, N. J.; Wyandotte Chemicals Corp., Wyandotte, Mich.; Tobacco By-Products Co., Louisville, Ky.

Among exhibitors of sanitation equipment and supplies at the five-day meeting were the following: John H. Breck, Inc., Springfield, Mass.; Diversey Corp., Chicago; Finnell Systems, Inc., Elkhart, Ind.; Franklin Research Co., Philadelphia; Hild Floor Machine Co., Chicago; Hillyard Sales Co., St. Joseph, Mo.; Huntington Laboratories, Huntington, Ind.; Walter G. Legge Co., New York; Lightfoot-Schultz Co., New York; Milburn Co., Detroit; Minnesota Mining & Mfg. Co., St. Paul; Oil-Dri Corp. of America, Chicago; Onox, Inc., San Francisco; G. H. Packwood Mfg. Co., St. Louis; Stepan Chemical Co., Chicago; Sugar Beet Products Co., Saginaw, Mich.; G. H. Tennant Co., Minneapolis; Waverly Petroleum Products Co., Philadelphia; West Disinfecting Co., Long Island City, N. Y.; Wyandotte Chemical Corp., Wyandotte, Mich.

Fungicidal Paint

A new copper fungicide has been developed by Engineer Research and Development Laboratories, Fort Belvoir, Va., for incorporation in paint and other protective coatings. Copper 8-quinolinolate, now reaching the chemical market in quantity, may revolutionize the paint and protective coating industry, in the opinion of Army Engineer researchers. In particular, the new chemical is helping to solve some knotty problems confronting the Corps of Engineers in protecting both structural materials and fabrics against fungus attack in the tropics.

A yellow-green compound, copper 8-quinolinolate, came to light in routine ERDL experiments that tested more than 500 common or possible fungicides. Formed by reaction of 8-hydroxyquinoline with copper acetate, the compound is heat stable and insoluble. It can be used in its original form as part of the pigment in paints. During the ERDL tests, common "red barn" paint containing copper 8, and a control sample of the same paint containing no fungicide, were exposed on identical wooden slabs for a period of 3 months to the ravages of heat, moisture and fungus-laden air in the tropical testing chamber.

At the conclusion of the test, the treated sample showed no visible deterioration. By contrast, the control sample of paint showed more than 95 per cent destruction, with heavy fungus attack on the wood beneath.

New Chamois-Like Cloth

A new chamois-like fabric known as the "Sammy Shammy" was announced recently by Modern Accessories Co., Norwood, O. It can be used for many of the same purposes as chamois. The new cloth can be washed in warm water and reused, but cannot be boiled or dry cleaned. It is priced to sell at about 39 cents retail.

Naphthalene Insecticide

As an active ingredient, an insecticide contains a proportion of liquid methylated naphthalene sufficient to be toxic to insects, of low volatility. In this is dissolved a suitable concentration of DDT. J. Hyman, to Velsicol Corp. Canadian Patent No. 459,167.

P & G Veterans Retire

Two executives of the Procter & Gamble Co., Cincinnati, who have a total of 75 years' service with the firm, retired recently. They were Leo E. Knaebel, who formed and has headed the supply division of the office manager since 1923, and W. B. White, manager of the auditing department, also since 1923. Mr. Knaebel has been with P & G for 45 years and Mr. White for 30 years.

The former started with Procter & Gamble as an office boy when the firm's entire general office was located on two floors at Third and Walnut Streets in Cincinnati. He helped to move the offices in 1912 and again in 1915, when the firm occupied its present offices in the Gwynn Building. Mr. White joined the company as office manager in Detroit in 1919. He developed and installed the sales accounting system used at the company's general office.

NSSA Show Almost Sold Out

With five months still remaining before the opening of its annual convention and merchandise show, to be held at the Stevens Hotel, Chicago, May 7-10, 1950, almost all of the exhibit booths and space have been sold out, it was announced recently by Leo J. Kelly, executive vice-president of the Nat'l Sanitary Supply Assn.

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TRADE NEWS

Dr. Klarmann Is Feted

Dr. Emil G. Klarmann, vice-president in charge of research for Lehn & Fink Products Co., Bloomfield, N. J., was recently tendered a dinner commemorating his twenty-fifth anniversary with the firm. Included among the gifts presented to Dr. Klarmann was a caricature depicting him as a thermometer dressed in loud blue suspenders. In addition, Dr. Klarmann received a selection of classical phonograph records, a gift of laboratory members. Dr. Moritz Dittmar was master of ceremonies at the dinner.

U. S. Sanitary Relocates

U. S. Sanitary Specialties Corp., Chicago, has just moved its offices and plant to a new location at 1001 S. California Ave., Chicago. The firm was formerly located at 435 S. Western Ave. In addition to the installation of new modern equipment and facilities, the new plant provides larger space for manufacturing, shipping and storage. In moving its production facilities, one department at a time was shifted to the new plant site to minimize as far as possible production delays.

Soap Dispenser Test

In a destructive test to measure the life of one of its liquid soap dispensers, Bobrick Manufacturing Co., Los Angeles, recently announced that its model 24 liquid soap dispenser had received 7,047,925 continuous punches from a test machine before it failed. During the test period 4,576 gallons of liquid soap were dispensed. The rate of strokes per minute on the dispensing mechanism was increased from 100 to 300 during the test, which began at the meeting of the National Sanitary Supply Association on May 8, 1949.

Schroeder Heads K-M Sales

The appointment of C. L. Schroeder as sales manager of the Sparklets and Chemical Products Division of Knapp-Monarch, St. Louis, was announced recently by Robert S. Knapp, executive vice-president. Mr. Schroeder was formerly executive vice-president and sales manager of McLaughlin-Gormley King Co., Minneapolis, prior to which he was sales director of Valier and Spies Milling Co., St. Louis. His new duties will include the expansion of sales and merchandising activities on behalf of established and new products. In addition to "K-M Magic Mist" and "K-M Repelamist," aerosol insecticide and insect repellent products, respectively, other new household type insecticide products are to be added to the company's line shortly.

C. L. SCHROEDER

New Polishing Cloth

A new, combination plastic and cotton cloth for polishing, dusting or wiping was announced recently under the trade name, "Nun-Lint," by Rittenbaum Brothers, Inc., Atlanta, Ga. Five cloths, each ½ yard square are put up in cellophane wrapped packages. The cloths are available for distribution through sanitary supply dealers.

Pennsalt Merges Units

Unification of its B-K and Household Products departments was announced recently by Pennsylvania Salt Manufacturing Co., Philadelphia. Under the new set-up, B-K salesmen are devoting their full time to the dairy trade, while household products salesmen are concentrating on jobbers and other wholesale and retail outlets. S. H. Crounse, formerly manager of sales of the B-K department, is sales manager of the new unit, which is known as the B-K and Household Products Department. Harold A. Fletcher, formerly manager of sales of the Household Products department, is retail sales promotion manager.

New CSC Lindane Plant

A new insecticide plant for the large-scale production of lindane, the pure gamma isomer of benzene hexachloride, will be constructed in Terre Haute, Ind., it was announced recently by Commercial Solvents Corp., New York. The new unit will be located adjacent to the present benzene hexachloride plant, and will utilize the latter's production of technical grade material for the extraction of the gamma isomer. The present plant is to be expanded to effect an estimated increase in production of 25 per cent. The insecticide projects are estimated to cost about $500,000.

NSSA Distributing Film

The National Sanitary Supply Association's recently completed film, "The Cleaning and Maintenance of Soft Floors," is now being shown before groups of NSSA members, it was announced late last month. The film is available for sale at $200, or it may be rented. The association is also distributing a series of charts dealing mainly with sweeping operations. The charts are illustrated and also carry a written commentary.

Buettner on Coast Tour

William O. Buettner, executive secretary of the National Pest Control Association, was guest of honor of the Northwest Pest Control Association at a meeting held recently at the Nicolette Hotel, Minneapolis. A dinner and dance followed an afternoon devoted to a discussion of pest control problems. Morton J. Levy of Twin City Exterminating Co., president of the association presided. Previously, Mr. Buettner was present at a dinner meeting of the Pest Control Operators of

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- PYRIDINE
- XYLOL
- HI-FLASH SOLVENT
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Veegum increases product sale-ability by stabilizing and preventing separation of the ingredients.

Veegum dispersions make excellent glass cleaners.

Veegum, acting as an emulsifier and stabilizer, materially reduces the amount of wax solvent normally required in many cream and wax polishes.

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the state of Washington, held at the Washington Athletic Club in Seattle. George L. Sells of Ardee Maintenance Co., was in charge of arrangements. Plans for a short course on pest control work and problems were discussed. A special committee composed of D. V. Turkian of Seattle; M. Weaver of Portland, Ore.; and George Atchison of Tacoma is to confer with Drs. Don C. Mote of Oregon State University and M. A. Hatch of the University of Washington, regarding plans for the short course.

New Oronite Quaternary

The development of a new quaternary ammonium salt said to be useful in household disinfectants was announced recently by Oronite Chemical Co., San Francisco. Known as "Oronite Quaternary Atm-50," the new compound will be commercially available soon. It is a colorless, odorless liquid in the form of an N-alkylbenzyl - N,N,N - trimethylammonium chloride. It is said to be highly active as a cationic surface active agent of high germicidal potency. Considered to be non-toxic and non-iritating to the skin, the new compound is compatible with most non-ionic surface active agents and with inorganic salts, thus permitting preparation of various dry, free-flowing detergent sanitizer compounds.

Amer. Home Earnings Rise

An increase in its earnings for the first nine months of 1949, as compared with the comparable period of 1948 was reported recently by American Home Products Corp., New York and subsidiaries. For the year to Sept. 30, 1949, the corporation reported consolidated net earnings of $8,018,546, equal to $2.08 per share on 3,858,585 shares of stock, compared with $6,936,868, or $1.80 a share during the first nine months a year ago.

Edwal Moves Offices, Labs.

Edwal Laboratories, Inc., Chicago, recently announced the transfer of sales and administrative offices and research laboratories to the company's plant at Ringwood, Ill., where it has been located since 1941.

Velsicol Appoints Weldon

The appointment of George Weldon as west coast representative for Velsicol Corp., Chicago, was announced recently by David W. Lynch,

GEORGE WELDON

sales manager of the chlordane division. Mr. Weldon is making his headquarters in Pomona, Calif., his home for the past three years. He holds a B.S. degree from Oregon State University, where he majored in entomology. He received a master's degree from Michigan State College. At one time Mr. Weldon was connected with California Spray Chemical Corp. as an entomologist and held a similar position with Standard Oil Co. of Indiana. More recently he was with Durham Chemical Co. For a year and a half he served as a malariologist in the United States Navy and was stationed in Japan and the South Pacific.

Bobrick Names Hysan

Hysan Products Co., Chicago, was recently appointed distributor in the Chicago and Dallas, Tex., areas for soap dispensers made by Bobrick Manufacturing Co., Los Angeles. Stocks will be maintained in the two cities by Hysan.

New Lehn & Fink Directors

Chandler Cudlipp, vice-president of James McCutcheon & Co., New York, and David M. Freudenthal, formerly vice-president and treasurer of Bloomingdale Brothers, Inc., New York, were recently elected directors of Lehn & Fink Products Corp., Bloomfield, N. J., at a stockholders' meting. A director of the Better Busines Bureau, Mr. Freudenthal more recently was special assistant to the chief of mission of the Economic Cooperation Administration in Rome.

New Wax Applicator

A new type applicator for use with floor finishes was announced recently by American Standard Manufacturing Co., Chicago. The new "4-in-1" applicator, designed for professional use, is constructed so that the entire washable, cover-all, sleeve-like, sheep-wool pad may be used, thus providing four surfaces. The pads are washable, may be replaced and are available separately. Pads are replaced by unscrewing the applicator handle from the one-piece block, sliding off the pad and slipping on a new one. The new "4-in-1" applicator is constructed without bolts, nuts, screws, nails or metal of any kind and is made to slide under radiators, low furniture, etc.

Chi. Fly Control Program

Chicago's city council has before it a proposal to rid the city of flies next summer by aerial spraying of the entire area with DDT. For this purpose an appropriation of $150,000 is being sought for inclusion in next year's budget.

Lowell Plant Site

The selection of Anguilla, Miss., as the site for the factory, warehouse and general office of Lowell Products Co., manufacturer and distributor of insecticides, furniture polishes and cleaners and soaps, was announced recently by A. M. Lowell, president.

New Sanitary Supply Co.

The formation of Sanitary Supply Co., 417 South 8th St., La Crosse, Wis., to distribute sanitary maintenance products and janitor supplies was announced recently. The firm was organized by Gordon H. Feinberg and Dolores M. Reichert. Mr. Feinberg, for 15 years connected with La Crosse Supply Co., until recently was assistant to the manager of that concern.

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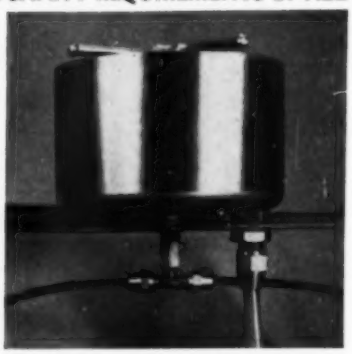

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Oppose DDT in Pharmacopoeia

THE proposed inclusion of DDT and other insecticides in the new edition of the *United States Pharmacopoeia* met with considerable opposition from representatives of the chemical industry at a meeting of the USP revisions committee held November 8th in Philadelphia. The opposition was based on the contention that such an action might classify insecticides as "drugs," and thus subject them to complex labeling and other requirements. After considerable discussion, the committee agreed to take care of the problem by providing that the USP references will apply only to products indicated by their titles to be medicinal.

Dr. George W. Fiero, Esso Standard Oil Co., New York, speaking for the National Association of Insecticide and Disinfectant Manufacturers, pointed out that the confusion between products intended for insecticidal and medicinal use might be avoided by changing the nomenclature of the two. He suggested that the products listed in the USP be different from the common names of products employed by insecticide manufacturers. For example, dimethyl phthalate, which is a common ingredient of insect repellents, might be called butopyronoxyl solution. He also suggested that the committee delete DDT as synonymous with chlorophenothane, which is listed in the USP.

Richard Hanson, General Chemical Division of Allied Chemical & Dye Corp., New York, representing the Manufacturing Chemists' Association, pointed out that if economic poisons are to be included in the USP, they may come to be considered as "drugs," and thus subject to the requirements of the Federal Food, Drug and Cosmetics Act. The requirements of the Act, he warned, may be inappropriate for insecticides, particularly with respect to labeling, packing and container requirements. Furthermore, the economic poisons will still fall under the Federal Insecticide, Fungicide and Rodenticide Act, and thus it is very possible that dual requirements, some of which may be in direct contradiction under the two laws, will be imposed on the products.

Hamilton in C.S.C. Post

The appointment of Abbott K. Hamilton as vice-president of Commercial Solvents Corp., New York, was announced recently by Henry E. Perry, president, following a meeting of the board. Mr. Hamilton has been with the firm since January, 1947.

Lehn & Fink Net Drops

Earnings of $154,148, equal to 38 cents a share, compared with $267,517, or 66 cents, last year, were reported recently for the quarter ended Sept. 30, 1949, by Lehn & Fink Products Corp., Bloomfield, N. J. A reserve of $160,000 with respect to recent devaluation of South American and Canadian currencies has been charged to surplus.

DDT-Resistant Mosquitoes

Strains of mosquitoes resistant to DDT were recently reported by the U. S. Department of Agriculture to have been found along the east coast of Florida. Previously, the Department reported the discovery of strains of houseflies resistant to the insecticide. Earlier DDT had been used successfully in the mosquito infested areas of Florida.

Fed. Varnish Names Schmidt

The appointment of Harold V. Schmidt as assistant to Glenn E. Doerr, eastern sales representative of the Federal Varnish Division, Chicago, was announced recently by the firm. The new location of the eastern office at 15 E. 40th St., New York 16, and a new telephone number MUrray Hill 6-3060 were also announced.

Monsanto Names Gillis

John L. Gillis of Pride's Crossing, Mass., was recently elected president of Nealco-Monsanto Co., an industrial alcohol manufacturing subsidiary of Monsanto Chemical Co., St. Louis. The election of Mr. Gillis, recently appointed general manager of Monsanto's Merrimac Division with headquarters in Everett, Mass., was announced by trustees of Nealco-Monsanto. The concern is jointly owned by Monsanto and Central Aguirre Sugar Co. of Boston.

A. Lowy of Kem Labs. Dies.

Adolph Lowy, 71, secretary and treasurer of Kem Laboratories, Bronx, N. Y., died suddenly recently. He had been with Kem since 1934.

Paper Towel Dispensers

A complete new line of paper towel and toilet paper dispensers was announced recently by Bennett Manufacturing Co., Alden, N. Y. Single-fold junior paper towel dispensers are available in both chrome plate and baked white enamel finishes. The junior model is 12¼ inches wide, 6½ inches deep and 7¾ inches high. Double fold general purpose towel dispensers have full length, flat front doors with rounded corners and are available in the same finishes as the junior model. Double fold models are 10¾ inches wide, 3¾ deep and 14¾ high. Toilet paper dispensers for either single or double fold paper come in two-tone effects with stainless steel tops and white enamel bodies.

New "4 in 1" lamb's wool wax applicator announced recently by American Standard Manufacturing Co., Chicago.

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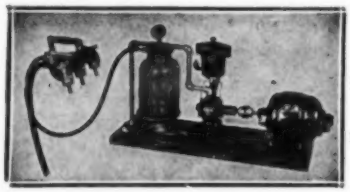
VACUUM FILLER

Fills directly from drum, pail or demijohn; no overhead tanks required. Suitable for bench or tray work; also fills containers in original shipping cartons.



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for Sprays, Liquid and Cake Soaps
Large Assortment of Odors

$3.25 per lb. In 5 lb. quantity $3.00 per lb.

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for Sprays, Liquid Soap, Deodorants
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Any Odor and Color Combination or Without Color

$2.50 and $5.00 per pt. $18.00 and $36.00 per gal.

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For 30 years we have served a satisfied clientele. Our Consulting Department is always ready to assist in solving your problems.

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December, 1949

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P. E. A. Elects Huberman

Jacob L. Huberman, of Scientific Exterminating Co., Bronx, was reelected president of the Professional Exterminators Association at the group's annual meeting at the Museum of Natural History, New York, Nov. 14. Also reelected were the following: vice-president, David Cantor, Bell Exterminating Co., New York; secretary, Mrs. Ethel Thorpe, and treasurer, William Farrell, Effective Exterminating Co., Bronx. The board of directors is now composed, in addition to the above, of Ray F. Davenport, Davenport Pest Control Co., Brooklyn; Alfred Friedman, Friedman's Exterminating Service, Bronx; Harry A. Rosenfeld, Worldwide Exterminating Co., Brooklyn; H. W. Albert, A. & G. Exterminating Co., Brooklyn; Samuel Diner, American Pest Control Co., Bronx.

In addition to a general discussion on plans for a two-day short course on pest control to be held in New York, Dr. Ralph E. Healy and William O. Buettner, technical director and executive secretary, respectively, of the National Pest Control Association, were present and spoke briefly.

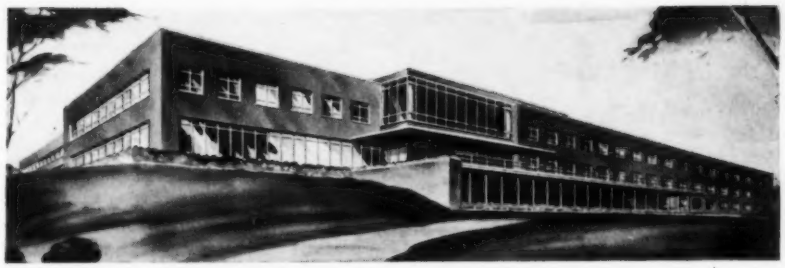
Ernest M. Mills, of the Fish & Wildlife Service of the U. S. Department of the Interior, has been chosen as the association's "Man of the Year" and will be honored at the organization's annual dinner at the Hotel Embassy, New York, Friday, Dec. 9.

New Fuld Price List

Fuld Bros., Inc., Baltimore, late last month published a 40-page descriptive price list containing information and prices on a large number of products being offered the sanitary chemical trade in 1950. Copies are available from the company.

New P&G Research Unit

Plans for the construction of a new research building on a 200-acre site near Venice, O., were announced late last month by Richard R. Deupree, chairman of the board of Procter & Gamble Co., Cincinnati. The two-story research building will make possible an increase in the company's research and development activities. The building will cost at least $1,500,000 and is expected to be ready for occupancy in about two years. The general plan is now completed and preliminary engineering on the building is already well under way.



New P. & G. Laboratory being built at Venice, O.

According to James G. Pleasants, vice-president in charge of manufacture, the new building "has been made necessary by the growth of our business and the need for more facilities to carry on basic research and development. . . . It is from this work that have come some of the most important developments in the soap, synthetic detergent, shampoo . . . fields."

In extending its laboratories to an outlying area, Procter & Gamble is following the practice which many firms have found desirable in that it permits part of its research and development work to be separated from its manufacturing activities.

British Soap Ration Up

British soap manufacturers met last month to decide whether added supplies of fats and oils to be made available for increased soap rations are to be diverted from large manufacturers of popular brands to makers of lesser known brands. The soap ration has been increased from four small cakes a month per person to five. Previously the British government allocated fats and oils to manufacturers on the basis of popular demand for their soaps and cleansers. A majority in the Soap Manufacturers' Trade Association is reported to favor a plan whereby the consumer's choice would be restricted to brands available. Under the scheme of allocating fats and oils to soapers on the basis of the popularity of their products with the consuming public, smaller manufacturers are said to have suffered. Ralph E. Huffam, president of the Soap Makers and Fat Splitters Federation, is reported to be of the opinion that the more successful concerns should help out the soapers adversely affected by the "brand popularity" system.

Catholics Collect Soap

A campaign to collect soap and clothing in the 382 parishes of the Roman Catholic Archdiocese of New York for the relief of needy and homeless persons in Europe, the Near East and Far East, ran from Nov. 20-27. Known as the Bishops' Thanksgiving Clothing Collection, the drive asked soap in bar form.

Develops New Lubricator

Mixing Equipment Co., Rochester, recently announced the development of a weight-loaded lubricator. Pressures may be applied to lubricants up to 150 pounds per square inch by means of the device. A positive warning is given when the lubricant supply runs low. The grease cup, with a capacity of 7½ ozs., has a conical bottom to facilitate lubricant passage.

New Ertel Filter

Ertel Engineering Corp., Kingston, N. Y., recently announced production of a new cylinder-type laboratory filter, Model 10. The filter has a capacity of 1.3 liters and is 27″ high.

New Sethco Filter

A new pint-size filter pump unit, Model LSU-5, said to be the smallest industrial filter ever built, was announced recently by Sethco, 105-07 150th St., Jamaica, N. Y. The complete unit weighs 20 lbs. and is designed to filter a wide range of solutions.

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Term 1949 Fly Control Good

A good job of fly control was done in 1949 by insecticides in dairy barns where sanitation and other recommendations were followed, according to E. H. Fisher of the College of Agriculture of the University of Wisconsin. Writing in Insect Control News No. 47, Mr. Fisher, an extension specialist in economic entomology, pointed out that flies were more numerous than usual in Wisconsin in 1949. The report points out that much of the complaint about the ineffectiveness of insecticides in 1949 was due to one or more of the following reasons: 1) late use of insecticides; 2) use of insecticides not recommended; 3) improper application; and 4) lack of sanitation. The study concludes that methoxychlor and DDT each did a good fly control job where sanitation and other recommendations were followed and that neither methoxychlor nor DDT did a good job where sanitation was not practiced.

Vancouver P.C.O. Lunch

A luncheon meeting of pest control operators, representatives of the city's health department and personnel of the Canadian Department of Agriculture was held in Vancouver, British Columbia, recently. William O. Buettner, executive secretary of the National Pest Control Association, and Myron S. Sempliner of Eradico Products Co., Detroit, a director of the N.P.C.A., also in attendance, discussed pest control problems. The pest control industry of Vancouver was represented by Leonard Hall of Pied Piper Co.; Ralph Freeman, Vancouver Fumigating Co., and Walter Bielek of Northwest Rat Proofing and Fumigating Co.

Electric Deodorizer

"Odor-Ban," a new electrical household deodorizing unit was announced recently by Cauhorn Distributing Co., Detroit. A small electrical unit, weighing only one and one-half ounces, it is plugged into an electric outlet. A built-in heating element activates a small deodorant cake that is placed in the unit. The cake is removed from the unit when unpleasant odors disappear. No electric cord is used since the unit has two prongs which fit directly into electric outlets. "Odor-Ban" does not "mask" unpleasant odors. Refill vials of six "O-B Deodorant Cakes" are available. The standard package, which includes an electric deodorizer, and a vial of six cakes, retails for $1.69. Refill vials are 45 cents. A "Moth O-B" cake has also been developed, six of which retail for 30 cents.

Koppers Advances Denig

Two important administrative changes, placing new managers over the production and research departments of Koppers Co., Pittsburgh, Pa., were announced recently. Fred Denig, vice-president, has been named manager of the company's production department, to succeed Hugh C. Minton, who resigned as vice-president in charge of production because of ill health. Dr. Frank D'Alelio has been appointed vice-president and manager of the research department, a position formerly held by Mr. Denig.

Org. Chems. Production

Monthly U. S. production figures on synthetic organic chemicals from January through July, 1949, were released recently by the U. S. Tariff Commission, Washington, D. C. The figures, which are preliminary, include all materials produced, whether consumed in producing plants, transferred to other plants of the producing companies or sold. Totals for June and July are shown below.

	June 1949	*July* 1949
Carbon tetrachloride	13,673,903	14,020,181
Cresylic acid, refined[3, 4]	1,927,932	1,336,799
Dichlorodiphenyltrichloroethane (DDT)	3,125,185	3,566,986
Hexachlorocyclohexane (Benzene hexachloride)	1,239,482	1,874,067
Gamma isomer content of hexachlorocyclohexane	174,094	260,673
Naphthalene:		
Tar distillers:[1]		
Crude, solidifying at—Less than 79° C.	8,488,052	8,295,555
Refined, solidifying at—79° C. and over	5,138,878	2,339,534
Coke—oven operators:[2]		
Crude, solidifying at—Less than 79° C.	5,217,671	4,872,061

[1] Produced by tar distillers from purchased coal tar only or from oil-gas or water-gas tar produced or purchased by tar distillers.

[2] Products of coke-oven operators only. These statistics are collected and compiled by the Coal Economics Division, U. S. Bureau of Mines.

[3] Statistics represent total production, from all sources including both data reported by coke-oven operators to the Coal Economics Division, Bureau of Mines and that reported by distillers of purchased coal tar to the U. S. Tariff Commission.

[4] Includes refined cresylic acid derived from petroleum.

[5] Reported to the U. S. Bureau of the Census.

Merck "Amuno" Test

All users of "Amuno" moth resistant for treating woolen fabrics now have the check testing service of Better Fabrics Testing Bureau, Inc., New York, at their disposal it was announced recently by Merck & Co., Rahway, N. J. The compound is supplied by Merck under license. It has been used for the past 12 years as a moth resistant for woolen fabrics, blankets, yarn and feathers. Better Fabrics Testing Bureau is making chemical and biological tests on samples of each lot shipped by the manufacturer, using "Amuno," and is granting the privelege of using its seal of approval on finished products approved.

Smith Baker President

Marion W. Smith, a vice-president and director of Vick Chemical Co., New York, was recently elected president of J. T. Baker Chemical Co., Phillipsburg, N. J. Vick acquired Baker in 1941. Mr. Smith, who participated in the acquisition, has been a director and active in the company's management. Elected to the Baker board of directors were Dr. Joseph R. Stevens, technical director, Robert R. Wittenberg and Leslie W. Garner, treasurer and controller.

Charles F. Wood Dies

Charles F. Wood, 67, a sanitation engineer and founder of Wood Sanitation Co., New Rochelle, N. Y., died recently in New Rochelle Hospital. A native of Barnard, Vt., he attended Masaschusetts Institute of Technology.

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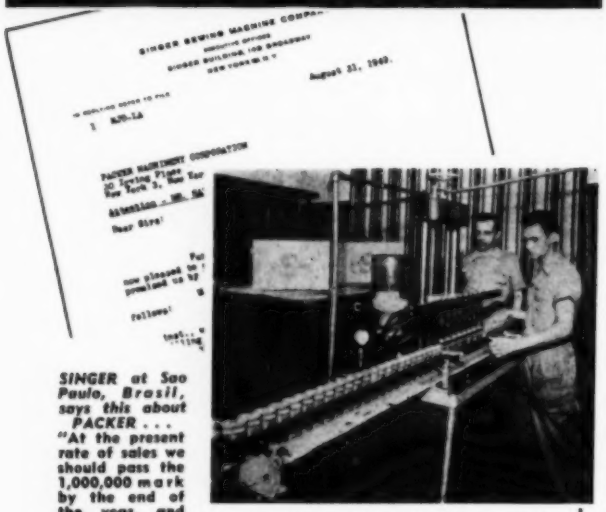

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